

South Carolina Department of Health and Environmental Control

Division of WIC Services

breastfeeding counseling

training manual



naturalNutrition

breastfeeding counseling

training manual

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Welcome and Introductions

"All of my boys were breastfed, and we encourage more mothers across South Carolina to breastfeed their newborns to ensure a healthy start."

*~ Jenny Sanford, (1962-)
former wife of SC Governor Mark Sanford*

Clinical studies continually confirm that breastfeeding is at the cornerstone of primary health care. Breastfed infants have a reduced susceptibility to common childhood infections and a better resistance to cope with them. Breast milk has all the nutrients infants need and is easy to digest. Breast milk is always ready, clean, and at the right temperature. Breastfeeding promotes the social development of infants, increases maternal-infant interaction, and reduces infant abandonment and abuse. Breastfeeding helps in the recovery following pregnancy and childbirth and reduces the risk of postpartum anxiety, ovarian and breast cancers, and osteoporosis. Breastfeeding is a secure, cost-effective method of infant feeding which provides economic and environmental savings. Breast milk is still important even after the baby has started complementary foods.

Most women are aware of some of the benefits of breastfeeding; however, many women still decide to formula-feed their newborns or supplement earlier than recommended. Mothers often cease breastfeeding due to the many challenges they face. As health professionals, we have a responsibility to provide services that improve the health of our clients. The key to breastfeeding success is helping families and mothers understand the benefits of breastfeeding and how to initiate and continue to breastfeed. Community support is important and this training is designed to help public health staff see the significant role they play in supporting breastfeeding in the community.

This training, *Natural Nutrition*, is designed to give public health staff in the state of South Carolina the knowledge to promote breastfeeding as the optimal method of infant feeding and the skills necessary to support breastfeeding women and infants in their everyday practice. The training is designed for professional and volunteer health care staff that will come into contact with pregnant women, mothers, and

their infants. This may include nurses, dietitians and nutritionists, peer counselors, administration staff, breastfeeding coordinators, childbirth educators, etc. The training is also suitable for students who will come into contact with women and infants so that they will be prepared with the knowledge and skills necessary to support breastfeeding once they enter the workplace. Although personal and professional experience with breastfeeding may enhance the learning experience, there is no pre-requisite other than a desire to learn about breastfeeding.

The main goal of this training is to increase breastfeeding initiation and duration rates in South Carolina and among Women, Infants, and Children (WIC) clients. This will be accomplished as participants (staff) develop the skills to 1) provide services which encourage the initiation and continuation of breastfeeding, 2) develop strategies to provide anticipatory guidance and support to prevent breastfeeding problems, address barriers to breastfeeding, and 3) empower women to overcome perceived or actual breastfeeding problems.

Breastfeeding: More Than Just Good Nutrition is designed to provide current information regarding the recommendations for breastfeeding and will focus on the knowledge and skills necessary to support the initiation and continuation of breastfeeding. The participants will attend all sessions, ask questions in large groups or during the breaks, participate in small groups and activities, follow along in the manual and take notes as necessary.

Upon completion of this training, participants are expected to be able to:

- Provide holistic breastfeeding management to women and infants
- Use counseling skills to talk with pregnant women and mothers about breastfeeding
- Discuss with pregnant women the importance of breastfeeding
- Outline practices that support breastfeeding
- Assist mothers in learning proper positioning and attachment
- Address common breastfeeding concerns or barriers
- Identify situations in need of referral for further assistance
- Identify practices that support and interfere with breastfeeding
- Develop strategies and tips for working with special circumstances

At the end of the training, participants will complete an exam, which covers the material in the learning sessions. Upon successful completion of the course and exam, participants will be awarded a breastfeeding counselor certificate from Division of WIC Services, South Carolina Department of Health and Environmental Control (SCDHEC). The training is NOT designed to expand the practice parameters of any health professional and information given by participants to pregnant women, mothers, and their infants should not replace the advice of the private medical provider. On-going education in breastfeeding management is strongly encouraged.

The information that will be covered in this training is divided into four modules. The first module covers background information related to breastfeeding and lays a foundation for the rest of the training. This module details breastfeeding and public health strategies, the advantages of breastfeeding, promotion of breastfeeding during pregnancy and counseling skills for effectively communicating with the breastfeeding mother. The second module outlines the different strategies for effective breastfeeding management and

details the anatomy and physiology of breastfeeding, assessing a breastfeed, milk expression and alternative feeding methods, and normal newborn behaviors. The third module includes information about special circumstances related to breastfeeding. Module III outlines contraindications to breastfeeding and the use of maternal medications while breastfeeding, breast and nipple problems, special infant situations, and maternal health concerns. The fourth and final module outlines on-going support for breastfeeding and includes information on breastfeeding in emergency or disaster situations, nutrition, returning to work, and documentation and record keeping. The objectives of each session are outlined on the following pages.

	Title	Objectives
		Upon completion of this session, participants will be able to:
	Module I: Laying the Foundation	
1	<i>Breastfeeding and Public Health</i>	<ul style="list-style-type: none"> • Differentiate among support, promotion, and protection of breastfeeding • Identify international strategies in place to increase breastfeeding rates • Identify national public health goals for breastfeeding in the United States • Describe state and local initiatives for breastfeeding
2	<i>Advantages of Breastfeeding</i>	<ul style="list-style-type: none"> • Identify the advantages of breastfeeding and the risks of formula-feeding • Differentiate between colostrum, transitional, and mature milk • Identify the uniqueness of breast milk composition • Define exclusive, partial, and token breastfeeding
3	<i>Counseling the Mother</i>	<ul style="list-style-type: none"> • Define the role of peer counselors • Use the 3-Step counseling strategy for breastfeeding counseling • Identify strategies for effective telephone counseling • Determine when to make a referral to a breastfeeding coordinator or lactation consultant • Discuss culturally sensitive counseling strategies
4	<i>Breastfeeding Promotion During Pregnancy</i>	<ul style="list-style-type: none"> • Identify effective approaches to prenatal breastfeeding education • List several prenatal indicators for breastfeeding problems • Identify birth practices that support breastfeeding • Discuss continued breastfeeding during pregnancy

	Title	Objectives
		Upon completion of this session, participants will be able to:
	Module II: Breastfeeding Management	
5	<i>Anatomy & Physiology and Milk Supply</i>	<ul style="list-style-type: none"> • Describe the anatomy of the breast and physiology of lactation • Describe the role of hormones in establishing and maintaining lactation • Describe the effect of suckling on establishing and maintaining a milk supply • Identify signs of adequate milk supply and intake by the infant • Discuss methods of maintaining a healthy milk supply
6	<i>Breastfeeding Assessment</i>	<ul style="list-style-type: none"> • Recognize effective positioning and attachment at the breast • Describe the results of poor attachment at the breast or ineffective suckling • Identify effective strategies for conducting a breastfeeding assessment
7	<i>Milk Expression and Alternative Feeding Methods</i>	<ul style="list-style-type: none"> • Instruct mothers on how to establish and maintain a milk supply when the infant cannot feed at the breast • Demonstrate how to hand express • Identify different methods of milk expression and proper storing techniques • Describe the risks and benefits of alternative feeding methods
8	<i>Normal Newborn Behaviors</i>	<ul style="list-style-type: none"> • Identify the six infant states of consciousness • Recognize organized and disorganized infant behaviors • Recognize signs of hunger and signs of satiety • Identify normal newborn behaviors and breastfeeding patterns

	Title	Objectives
		Upon completion of this session, participants will be able to:
	Module III: Special Situations	
9	<i>Breast and Nipple Problems</i>	<ul style="list-style-type: none"> List ways of assisting mothers with flat or inverted nipples Identify the symptoms, causes, and management options for: <ul style="list-style-type: none"> Sore nipples Engorgement Plugged ducts Mastitis Breast abscess Thrush
10	<i>Contraindications and Medications</i>	<ul style="list-style-type: none"> State when breastfeeding is contraindicated Identify at least two sources of information on the use of medications while breastfeeding List the three criteria for the Lactational Amenorrhea Method (LAM) Identify methods of birth control that are compatible with breastfeeding
11	<i>Special Infant Situations</i>	<ul style="list-style-type: none"> Identify problems associated with the following and strategies to help facilitate breastfeeding: <ul style="list-style-type: none"> Premature infants Multiples Slow weight gain Jaundice Neurologically impaired Cleft Lip/Palate Breast refusal and nursing strikes Describe strategies for helping mothers cope with grief.
12	<i>Maternal Health Concerns</i>	<ul style="list-style-type: none"> Identify maternal health conditions in need of additional breastfeeding support and strategies to help facilitate the initiation and continuation of breastfeeding Identify maternal conditions which may cause a decrease in the mother's milk supply or breastfeeding failure

	Title	Objectives
		Upon completion of this session, participants will be able to:
	Module IV: Ongoing Support	
13	<i>Breastfeeding in Emergencies</i>	<ul style="list-style-type: none"> • Identify common misconceptions about breastfeeding during emergencies • Outline strategies which promote breastfeeding during emergency situations • Describe methods of induced lactation and relactation
14	<i>Nutrition</i>	<ul style="list-style-type: none"> • Describe healthy nutritional habits for breastfeeding women • Identify populations at risk of poor nutritional status • Recognize signs that an infant is ready for complementary foods and discuss methods of introducing solid foods • Describe strategies to ease the weaning process
15	<i>Returning to Work and Breastfeeding</i>	<ul style="list-style-type: none"> • List the benefits of breastfeeding when women return to work • Describe ways companies can support breastfeeding women in the workplace • List factors that are important to successful breastfeeding when returning to work • List ways that public health staff can support breastfeeding mothers
16	<i>Documentation</i>	<ul style="list-style-type: none"> • List key components of record keeping • Use the Breastfeeding Summary Form (DHEC 0757) to document contacts with pregnant and breastfeeding women and infants • Use the Breastfeeding Assessment Tool to document a breastfeeding assessment or inperson consultation

MODULE I

Laying the Foundation

Breastfeeding and Public Health

“Breastfeeding is a natural safety net against the worst effects of poverty...it is almost as if breastfeeding takes the infant out of poverty for those few vital months in order to give the child a fairer start in life and compensate for the injustices of the world into which it was born.”

~James P. Grant, (1922-1995)

American statesman and children’s advocate

The practice of feeding infants formula rather than breast milk and the early introduction of other foods places infants at an increased risk of death and disease not only in developing countries, but in the United States as well. Many women are aware of the dangers of not breastfeeding in developing nations. Most do not understand the extent to which our formula-feeding culture negatively affects the lives of women and children in the United States. Improved breastfeeding practices could save millions of dollars each year and improve the health and well being of women and children. Support is available for breastfeeding and many public health strategies have been created in order to promote, protect, and support breastfeeding.

Breastfeeding promotion: focuses on the advantages of breastfeeding to the mother and infant, the economy and the community, and promotes breastfeeding as the preferred method of infant feeding.

Breastfeeding support: is achieved through strategies, which increase the initiation, exclusiveness, and duration of breastfeeding. It includes management and counseling skills to support breastfeeding women and infants.

Breastfeeding protection: involves legislation which protects the breastfeeding rights of women and infants. It also involves the regulation of marketing of breast milk substitutes as a way of protecting breastfeeding.

International Goals for Breastfeeding

The Innocenti Declaration was developed by participants at the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF) policymaker’s meeting on “Breastfeeding in the 1990s: A Global Initiative.” The document highlights breastfeeding as an invaluable method of infant feeding and outlines operational targets for

OBJECTIVES

Differentiate among support, promotion, and protection of breastfeeding

Identify international strategies in place to increase breastfeeding rates

Identify national public health goals for breastfeeding in the United States

Describe state and local initiatives for breastfeeding

governments to protect, promote, and support breastfeeding. The Innocenti Declaration was adopted by thirty countries and continues to be a driving force behind many international strategies to improve maternal and child health outcomes. In 2005, the Innocenti Declaration of 1990 was confirmed and five additional operational targets were identified. The Innocenti Declaration can be downloaded from www.innocenti15.net/declaration.pdf

The Baby-Friendly Hospital Initiative, developed by WHO and UNICEF, is a global effort to promote, protect, and support breastfeeding in maternity facilities, hospitals, and birthing centers. The program is based upon the Evidence for the Ten Steps to Successful Breastfeeding and recognition is given to maternity facilities that have implemented these steps to support and promote breastfeeding practices. More than 19,000 facilities world-wide have received the baby-friendly designation. As of July 2009, eighty-three baby-friendly facilities are in the United States. There are currently no babyfriendly hospitals in the state of South Carolina. The Ten Steps to Successful Breastfeeding can be downloaded from the WHO at www.babyfriendlyusa.org/eng/10steps.html

The World Health Assembly adopted the International Code of Marketing of Breast Milk Substitutes (the WHO Code) in 1981. It is an international public health recommendation to regulate the marketing of practices that promote artificial feeding such as breast milk substitutes, bottles, and rubber nipples as a way to promote breastfeeding. The WHO Code prohibits aggressive marketing strategies which undermine breastfeeding such as providing free formula samples to new mothers or promoting infant formula through health care facilities. The Code also mandates that formula labels include the hazards associated with formula feeding and the advantages of breastfeeding. The United States initially voted against the International Code in 1981, but endorsed the Code thirteen years later. Only one state in the US has attempted to take legal action to regulate the marketing of breast milk substitutes. The International Code of Marketing of Breast-milk Substitutes can be downloaded at

www.who.int/nutriron/publications/code-english.pdf

National Initiatives for Breastfeeding

In 1984 the Surgeon General's Workshop was held on breastfeeding and human lactation. The workshop set forth to review the current efforts in the United States which support and promote breastfeeding. The workshop also sought to identify challenges and barriers to breastfeeding and develop strategies to help facilitate improved breastfeeding practices. Since the Surgeon General's workshop many national initiatives have been made in the United States to promote, protect, and support breastfeeding.

Healthy People 2010 is a set of public health priorities to improve disease prevention and health promotion objectives for the United States. The overarching goals of Healthy People 2010 are to increase quality and years of healthy life and eliminate health disparities. Breastfeeding has been identified by Healthy People 2010 as the most complete form of nutrition for infants and a significant contributor to maternal and infant health. As part of the Healthy People 2010 goal to improve the health and well-being of women, infants, children, and families, national goals for breastfeeding are outlined. In the year 2000, Healthy People identified a target of 75% of mothers initiating breastfeeding in

Ten Steps to Successful Breastfeeding

1. Maintain a written breastfeeding policy that is routinely communicated to all health care staff
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within one hour of birth
5. Show mothers how to breastfeed and how to maintain lactation, even if they are separated from their infants.
6. Give infants no food or drink other than breast milk, unless medically indicated.
7. Practice "rooming in"-- allow mothers and infants to remain together 24 hours a day.
8. Encourage unrestricted breastfeeding.
9. Give no pacifiers or artificial nipples to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

the early postpartum period and 50% of mothers still breastfeeding at six months. Although breastfeeding rates have increased in recent years, this goal was not reached and racial and socio-economic disparities continue to exist. Healthy People 2010 affirmed its 2000 goals and added an additional target of 25% of mothers breastfeeding at one year. This document can be downloaded from www.healthypeople.gov

"It's the lucky baby, I feel, who continues to nurse until he's two."

*~ Former Surgeon General,
Dr. Antonia Novello*

Healthy People 2010 Goals

Objectives 16-19: Increase the proportion of mothers who breastfeed their babies

Objective	Increase in Mothers Who Breastfeed	1998 Baseline	2010 Target
		Percent	
16-19a.	In early postpartum period	64	75
16-19b.	At 6 months	29	50
16-19c.	At 1 year	16	25

Although there are well established public health goals for breastfeeding, progress has been slow and the disparities continue. In the Health and Human Services (HHS) Blueprint for Action on Breastfeeding, the Surgeon General of the United States issued a call to action to reduce disparities and help facilitate improved breastfeeding rates. The blueprint called for health care systems, the workplace, the family, and the community to support breastfeeding in order to reach the Healthy People objectives for breastfeeding. This document can be downloaded from

cdc.gov/breastfeeding/pdf/bluprntbk2.pdf

In 2001 the United States Breastfeeding Committee, which was established in response to the Innocenti Declaration, published the Protecting, Promoting, and Supporting Breastfeeding in the United States: A National Agenda. This national agenda sets forth goals and strategies to increase breastfeeding initiation and duration rates and promote breastfeeding as the cultural and societal norm. This document can be downloaded from

www.usbreastfeeding.org/Portals/O/Publications/Nationalagenda-2001-USBC.pdf

In addition to the national initiatives to improve breastfeeding practices in the United States, professional groups such as the American Academy of Pediatrics, the American College of Obstetrics and Gynecology, the American Academy of Family Physicians, Obstetric and Neonatal Nurses (AWHONN), the American Dietetic Association, and the National Association of WIC Directors, have published statements which endorse breastfeeding as a public health priority.

Breastfeeding and South Carolina

The Center for Disease Control (CDC) National Immunization Program, in partnership with CDC's National Center for Health Statistics, has conducted the National Immunization Survey (NIS) in which breastfeeding questions are asked to assess breastfeeding practices across the country. The NIS survey results reveal that breastfeeding rates are particularly low among African-Americans, socio-economically disadvantaged groups, and WIC participants. The NIS data also reveal that South Carolina remains well below the Healthy People 2010 goals for breastfeeding and is consistently in the lowest ten states for breastfeeding rates across the country.

South Carolina Breastfeeding Rates, 2006

Ever Breastfeed	Breastfeeding at 6 Months	Breastfeeding at 12 Months	Exclusive Breastfeeding at 3 Months	Exclusive Breastfeeding at 6 Months
61.3%	30.4%	13.9%	25.5%	9.6%

The South Carolina Breastfeeding Action Committee (SCBAC), a committee which actively promotes legislation to protect, support, and promotes breastfeeding in the state of South Carolina has estimated that if South Carolina were to meet the Healthy People 2010 breastfeeding goals:

- Over \$22 million could be saved each year in health care savings;
- Fewer childhood infections could result in savings of \$400 per child per year on
- Medicaid;
- A reduction of at least \$400 per year per child in WIC food costs.

In 1986, South Carolina received funding from a federal maternal and child health grant. When the grant was initiated, the breastfeeding rate in South Carolina was 9%. The grant funds were used in several health districts in the state to promote breastfeeding. After the federal grant funds were depleted, the WIC program assumed responsibility for breastfeeding promotion and support for the state of South Carolina. Although South Carolina remains well below the Healthy People recommendations, progress has been made.

Breastfeeding support is now available to all WIC mothers and infants. Breastfeeding mothers receive an enhanced food package, can receive support and education to assist them in initiating and continuing breastfeeding, and can receive breast pumps or other breastfeeding aids when needed. Still, WIC faces many challenges in increasing breastfeeding rates.

NWA Recommendations

- Orient and train all WIC staff on breastfeeding promotion and support
- Develop policies that encourage a breastfeeding friendly environment
- Coordinate with private and public health care systems, educational systems and community organizations to promote and support breastfeeding
- Evaluate breastfeeding activities on an annual basis
- Offer appropriate breastfeeding education and support to all pregnant WIC participants
- Create policies to allow breastfeeding infants to receive a food package consistent with their nutritional needs
- Provide breastfeeding support throughout the postpartum period

“It has been estimated that at least 29 million dollars could be saved annually in formula costs if WIC mothers would breastfeed for just one month.”

~ US Department of Agriculture

WIC Breastfeeding Rates, 2005

	Ever Breastfeed	Breastfeeding at 6 Months	Breastfeeding at 12 Months	Exclusive Breastfeeding at 3 Months	Exclusive Breastfeeding at 6 Months
Received WIC	66.8%	30.3%	15.7%	31.7%	10.5%
No WIC but eligible	77.6%	48.6%	28.5%	49.1%	20.4%
No WIC and ineligible	81.9%	49.2%	24.5%	46.1%	17.3%

Although breastfeeding rates among WIC participants remains well below the Healthy People goals, breastfeeding initiation and continuation among WIC participants is increasing. In order to help increase the percentage of breastfeeding women and infants in the United States, the National WIC Association (NWA) has developed recommendations to assist state and local agencies in initiating and strengthening existing breastfeeding promotion and support programs.

In April 1994 representatives from the state of South Carolina met to plan, organize and implement a state Breastfeeding Coalition. The South Carolina Breastfeeding Coalition is dedicated to the health and wellbeing of mothers and their babies and has been formed to promote and support the art and science of human milk feeding as the superior form of infant feeding. Currently, South Carolina has four local area breastfeeding coalitions working with the state to achieve its goals.

Due to the efforts of groups such as the SCBAC, the SC Breastfeeding Coalition and others, South Carolina is now one of forty-one states that have legislation in effect regarding breastfeeding. In 2006 South Carolina passed legislation to protect breastfeeding women and children. The article states:

“The General Assembly finds that breastfeeding, if possible, is an important and basic act of nurturing which should be encouraged in the interest of maternal and child health. A woman may breastfeed her child in any location where the mother and her child are authorized to be. Breastfeeding a child in a location where the mother is authorized to be must not be considered indecent exposure.”

In order to achieve the breastfeeding goals set by the US Surgeon General and the US Department of Health and Human Services, public health staff must be well equipped in implementing strategies to promote breastfeeding education and support. Consistent, evidence-based breastfeeding education for public health professionals will provide a uniform message of breastfeeding promotion and support in South Carolina and is a step towards improving the health and well-being of women and children through improved breastfeeding practices.

Advantages of Breastfeeding

“Public health leaders say the weight of the scientific evidence for breast-feeding has grown so overwhelming that it is appropriate to recast their message to make clear that it is risky not to breastfeed.”

~Roni Rabin

New York Times Columnist

Human milk is the ideal nutrition for the growth and development of infants and both the act of breastfeeding and the composition of breast milk are important. Breast milk helps to protect against many infections and may even prevent some infant deaths. Breastfeeding also provides mothers with improved health outcomes. It is readily available, always at the right temperature, and there is no time wasted on preparing bottles. The effects of breastfeeding are dose related, meaning that the more exclusive and the longer the duration, the greater the effects.

The WHO, UNICEF, American Academy of Family Physicians, American College of Obstetrics and Gynecology, American Academy of Pediatrics, and the Academy of Breastfeeding Medicine all recommend exclusive breastfeeding for the first six months of life. If every baby were exclusively breastfed from birth to six months millions of lives would be saved and enhanced each year. While most women are aware of some of the advantages of breastfeeding, many still choose to bottle-feed their babies, often equating formula with breast milk. The consequences and risks of not breastfeeding have been described in multiple medical journals.

Risks of NOT Breastfeeding

Infants who are NOT breastfed have an increased risk of:

- **Diarrhea:** At least 400 children die each year in the United States from diarrhea disease, with 250-300 due to not breastfeeding. (Schssemann, 1982; Ho, et al., 1990; Newberg, et al., 1998)
- **Respiratory Disease:** 500-600 children die each year in the United States due to acute respiratory disease that can be attributed to not breastfeeding. (Cunningham, 1991; Schesselmann, 1982)
- **Otitis Media:** The risk of developing ear infections increases as the amount of breast milk decreases. Children who are not breastfed or who

OBJECTIVES

Identify the advantages of breastfeeding and the risks of formula-feeding

Differentiate between colostrum, transitional, and mature milk

Identify the uniqueness of breast milk composition

Define exclusive, partial, and token breastfeeding

breastfeed for a shorter duration are at a higher risk of ear infections. (Scariati, 1997; Duffy, 1997)

- **Bacteremia and Meningitis:** Infants who are not breastfed are at an increased risk of bacteremia and meningitis of nearly four times. (Fallot, et al, 1980)
- **Juvenile Diabetes:** Nearly 25% of Juvenile Diabetes cases are in children who were not breastfed or who were exposed to formula during infancy. (Mayer, 1988; Kimpimaki, et al., 2001)
- **Cancer:** Children who are artificially fed or breastfed for only 6 months or less, are at an increased risk of developing cancer before age 15. Having been breastfed as a child also reduces the risk of breast cancer later in life. (Potischman, Troisi., 1999; Freudenheim, 1994; Davis, 1988)
- **Allergies & Asthma:** Breastfeeding, even for short periods, is associated with a decreased risk of allergies and lower incidence of wheezing, eczema, prolonged colds, diarrhea, and vomiting. (Oddy, 1999; Dell, To, 2001; Gdalevich, 2001)
- **Dental Caries:** Breastfed infants do not have a longer incidence of dental cavities and malocclusion and the longer the duration, the greater the effect. (Labbok, 1987; Mattos- Graner, 1998)

- **SIDS:** Infants who are breastfed during the first six months of life have a reduced risk of sudden infant death syndrome. (McVea, 2000; Ford, et al., 1993)
- **Obesity:** The infant's ability to self-regulate their milk intake may have an effect on later appetite regulation and a reduced risk of obesity. (Grummer-Strawn, 2004; Gillman MW et al., 2001)
- **Abandonment and Abuse:** Early contact following delivery, rooming-in, and breastfeeding may reduce infant abandonment and abuse. Children who were breastfed also report higher levels of parental attachment. (Lvoff, 2000)

Infants who are NOT breastfed have also been found to have **lower IQs** (Mortensen et al., 2002; Lucas, 1992) and **cognitive development** (Rogan & Gladden, 1993), visual acuity (Birch, et al. 1993), and **neuromotor skills** in neurologically impaired children (Lanting 1994).

Mothers who do NOT breastfeed are at an increased risk for:

- **Ovarian Cancer:** An association has been identified between breastfeeding and a reduced risk of ovarian cancer. For each month a woman breastfeeds, her risk of ovarian cancer is decreased by 2%. (Danforth, et al., 2007)
- **Breast Cancer:** Among both pre- and post-menopausal women, the risk of breast cancer decreases with the increased duration of breastfeeding (Beral, 2002).
- **Cancer:** In addition to breast and ovarian cancer, breastfeeding has been associated with a reduced risk of other cancers including esophageal, Hodgkin's disease, thyroid, and uterine cancer. (Mack, et al, 1999; Brock, 1989; Cheng, 2000; Glaser, 2003)
- **Osteoporosis:** Extended breastfeeding may reduce the risk of hip fractures. Women with osteoporosis are four times more likely to have not breastfed. (Blauww, 1994; Melton, 1993)
- **Postpartum Anxiety and Depression:** Breastfeeding women report less anxiety, less stress, and have a lower risk of postpartum depression than women who bottle-feed their infants. (Groer, 2005; Harlow, 2004; Virden, 1988)

- **Slower Postpartum Weight Loss:** At one month postpartum, breastfeeding women are closer to their pre-pregnancy weights than women who exclusively formula-feed. Continued weight loss is often reported by breastfeeding mothers (Kramer, 1993; Dewey, 2001).
- **Decreased Child Spacing:** Fully breastfeeding mothers who remain amenorrheic and are exclusively breastfeeding have less than a two percent chance of becoming pregnant during the first six months postpartum. (Kuate, 1997)
- **Postpartum Hemorrhaging:** Early initiation and frequent breastfeeding is associated with contraction of the uterus and a decrease in blood loss following delivery. (Sobhy, 2004)

Women and infants who do NOT breastfeed, place **society** at an increased risk of:

- **Vaccine Ineffectiveness:** Breastfed infants show a better response to vaccines than formula-fed infants. (Han-Zoric, 1990)
- **Financial Cost:** A minimum of \$3.6 billion would be saved if breastfeeding in the US met the Healthy People 2010 goals (Weimer, 2001). Nearly \$500 per infant could be saved in WIC costs and Medicaid expenses during the first six months by breastfeeding. (Montgomery & Splett, 1997). The estimated cost of not breastfeeding for the first year is between \$1000 and nearly \$4000 depending on the brand of formula and number of doctor visits.
- **Employee Absenteeism:** Breastfeeding reduces employee absenteeism, employee turnover, and decreases the number of health care claims. (Weimer, 2001)
- **Ecological Cost:** Breastfeeding decreases the use of natural resources such as glass, plastic, metal, or paper and adds less waste to landfills. (Weimer, 2001)

The risks of **not** breastfeeding are associated with:

- Lack of protective agents against illnesses
- Suboptimal balance of nutrients and lack of vital ingredients in formula
- Contamination or recall of formula
- Contaminated water used for mixing formula or washing bottles
- Errors in mixing the correct concentration of formula
- Diluting of formula to make it last longer
- Inappropriate supplements such as waters, teas, and juices resulting in less milk consumed and slow weight gain
- Unnecessary expense to society

Breast Milk Composition

Breast milk is a living fluid that actively protects against infection while providing optimal nutrition. It is species-specific, designed for the unique needs of human infants. Breast milk is dynamic. When a mother responds to her infant's feeding cues, her milk changes to meet the needs of her infant. Colostrum and preterm breast milk are adapted to the gestational age of the infant. Mature breast milk changes from feed to feed, day to day, and month to month to meet the baby's needs. Even the flavor of breast milk changes, affected by what a mother eats, easing the transition to complimentary foods.

Colostrum

- The first milk produced by the breasts. Production begins during pregnancy and continues through the first few days after birth. It is thick, sticky, and yellowish or clear in color.
- Coats the infant's gut protecting it against bacteria and viruses. If any water or artificial feeds are given during this time, some of this barrier is removed, increasing the risk of infection.
- Acts as a laxative to help the baby remove meconium (the first sticky, black stools), helping to prevent jaundice.

- Low in fat and high in carbohydrates and protein
- Rich in antibodies, antioxidants, and immunoglobulins
- Comes in small amounts, suited to the size of the newborn's stomach.

Transitional Milk

- Comes in after colostrum and is usually available for 7-14 days postpartum
- Contains more lactose, fat, calories, and water-soluble vitamins than colostrum

Mature breast milk

- Contains all of the major nutrients, protein, carbohydrates, fat, vitamins, and minerals in the amounts the baby needs and is nearly 90% water. It changes in relation to the time of day, the length of a breastfeed, the needs of the baby, and the diseases with which the mother has had contact.
- The components of breast milk provide nutrients as well as substances that help in digestion, growth, and development and provide protection from infections. Breast milk continues to provide these nutrients and protection as the child grows. As long as the child continues to breastfeed they receive these benefits.

Nutrients in breast milk

Breast milk is a complex fluid of over 200 known constituents, as well as many other components which ongoing research is continuing to identify. Breast milk contains proteins, vitamins, cells, carbohydrates, fats, minerals, and trace elements. Breast milk also contains immunological components, enzymes, hormones, and growth factors. Formula manufacturers have attempted to mimic the components of breast milk, but breast milk is a unique substance that cannot be copied.

For example:

- A high level of iron is added to formula because iron is not absorbed well. This excess iron can feed the growth of harmful bacteria. The amount of iron in breast milk is low, but is well absorbed by the infant's intestine if the baby is exclusively breastfed. This is due to other components of breast

milk, such as lactoferrin, which aid in this process and have an antibiotic effect on bacteria. No other sources of iron are needed until the infant is six months of age.

- Some formulas have now added DHA and ARA, essential fatty acids found in breast milk. DHA and ARA help with the infant's brain development and visual acuity. Significantly different amounts of these ingredients have been found in the brains and retinas of breastfed versus formula-fed infants. These components are not absorbed in the same manner as when in breast milk and it is unknown whether these will have similar effects long term.

Breastfeeding Patterns

Breastfeeding patterns vary widely. Women may practice full or exclusive breastfeeding, partial breastfeeding, or token breastfeeding.

- Exclusive Breastfeeding: No other liquid or solids are given with the exception of vitamins, minerals, or medicines
- Partial Breastfeeding: Breast milk and formula or other supplements are given. Partial breastfeeding varies widely depending upon the percentage of nutrition the infant receives from breastfeeding
- Token Breastfeeding: Only occasional or minimal breastfeeds

Exclusive breastfeeding provides the infant with enough nutrients and water for the first six months of life. During the second half of the first year, breastfeeding continues to provide nutrition and antiinfective properties to infants and should continue as complementary foods are added. For many infants, breast milk continues to provide one half to one third of the child's calories at twelve months. The more closely a mother and infant exclusively breastfeed during the first six months and the longer the duration of the breastfeeding relationship the greater the effects of breastfeeding will be.

Counseling the Mother

“It is only in the act of nursing that a woman realizes her motherhood in visible and tangible fashion; it is a joy of every moment.”

*~Honore’ de Balzac (1799-1850)
French novelist and playwright*

Good communication skills help to uncover a woman’s thoughts, beliefs, and practices about breastfeeding and can help to build self-confidence in her ability to breastfeed. When counseling a breastfeeding mother, there is often no problem to be fixed, rather the mother simply needs reassurance and encouragement that she is doing well. When counseling a breastfeeding mother, providing anticipatory guidance regarding normal breastfeeding patterns and what to expect can reassure women when they are doing well and can help to prevent future difficulties. Counseling is most effective when the mother and baby feel valued and heard and are involved in the problem solving and development of a plan.

Peer Counselors

Most new mothers do not call for help, even if they have questions about breastfeeding. Peer counseling and mother-to-mother support has been instrumental in improving breastfeeding initiation and duration rates, particularly for women of disadvantaged and diverse cultural backgrounds. Peer counselors are women who have successfully breastfed, come from the target population, and have a desire to help other mothers have a positive experience with breastfeeding. WIC breastfeeding peer counselors are personally experienced in breastfeeding and guide, inform, and support other WIC mothers in their decision to breastfeed. Peer counselors are usually available after hours and on weekends and are trained to assist breastfeeding mothers and infants with common breastfeeding problems and concerns. WIC breastfeeding peer counselors have successfully completed the four modules of the breastfeeding counselor training, required to attend annual updates, and are usually supervised by the breastfeeding coordinator. They are instructed to refer clients to other health professionals or lactation specialists if further assistance is needed.

OBJECTIVES

Define the role of peer counselors

Use the 3-Step counseling strategy for breastfeeding counseling

Identify strategies for effective telephone counseling

Determine when to make a referral to a breastfeeding coordinator or lactation consultant

Discuss culturally sensitive counseling strategies

3-Step Counseling Strategy

As part of the WIC National Breastfeeding Promotion Project, the United States Department of Agriculture’s Food and Nutrition Service has contracted with Best Start Social Marketing to develop a breastfeeding peer counseling model to increase breastfeeding initiation and duration rates and improve public support for breastfeeding. The peer counselor program model, outlines a counseling strategy to determine a mother’s concern and provide her with suggestions in a way she can understand. The Best Start Counseling Strategy includes three steps: asking open-ended questions, affirming feelings, and educating.

Step 1: Ask Open-Ended Questions

The first step is designed to elicit any underlying concerns a woman may have that would prevent her from breastfeeding. Open and closed-ended questions provide very different information. Closed-ended questions can usually be answered with a yes or no, or very short one to two word answers. People often feel interrogated when asked closed-ended questions and

may give the answer they think is right rather than what they really believe. Continuing a conversation is difficult using closed-ended questions.

Open-ended questions elicit a wide range of answers and do not lead to false responses or premature commitments. In other words, no right or wrong answers result from open-ended questions. Most open-ended questions begin with who, what, why, or how. Using open-ended questions may help a mother share her thoughts or concerns. The first questions should be openended.

Following up on an open-ended question with another question is usually helpful. Most people do not give complete answers to the first questions they are asked. Asking additional, follow-up questions may help uncover more detailed information. These follow-up questions are called probes.

Probing questions

- *Extending Probe:* ask the client to tell you more
 - ♦ Could you tell me a little more about how you feel about what your mother said?
- *Clarifying Probe:* ask the client what she just said
 - ♦ When you say you're afraid that breastfeeding would be embarrassing, are you saying it would be embarrassing for you, or for someone else who might see you?
- *Reflecting Probe:* acknowledge to the participant that you've heard what she's said and encourage her to say more
 - ♦ So you think your mother would disapprove?
- *Redirecting Probe:* move the client to explore a different related subject
 - ♦ What other concerns do you have about breastfeeding?

You may also want to pad your questions by putting extra words around the question such as the client's name, repeating the client's words, or adding pauses. Padded questions are less likely to offend and much more likely to get non-defensive responses.

Step 2: Affirm Feelings

Once a mother has shared her concerns about breastfeeding, the next step is to affirm her feelings. This is often the most important, but most difficult, step to learn. Affirmation builds a mother's confidence in her ability to breastfeed and lets her know that her concerns are not unusual, but normal and okay. Affirmation is often offered in short, simple sentences that reassure a woman in her ability to care for and breastfeed her baby. Affirming a mother's feelings also reassures the mother that the counselor has heard her concerns. Once a woman's feelings are affirmed, she may be more receptive to information or education about breastfeeding and she may continue to share other doubts or concerns. The breastfeeding counselor does not have to agree with a mother to affirm her feelings, but communicating empathy helps build respect and rapport. The foundation of trust that is formed through the affirmation of feelings builds a woman's confidence in her ability to breastfeed and may encourage her to continue.

Step 3: Educate

After asking open-ended questions (step 1) and affirming the client's feelings (step 2), the role of the breastfeeding counselor is to provide a mother with education and support. When educating a breastfeeding mother:

- *Direct the information to a mother's specific concern:* Women will be more likely to remember information that is directly focused on the issues she has raised.
- *Give information in small amounts and keep it simple:* New mothers can be overwhelmed when receiving large amounts of information at one time or complicated instructions for breastfeeding. Providing mothers with small bits of information that address her concerns in ways she can understand will make it easier for mothers to remember.
- *Provide information with several different options which address the concern:* Offering multiple solutions not only lets mothers know that more than one solution may be available, but it also gives women the opportunity to choose which option she feels is most appropriate for her situation.

- *Provide follow-up as necessary:* Having repeated conversations allows the counselor to build a relationship with the mother, offer anticipatory guidance, and address any other questions that a mother might have.
- *Provide additional resources:* Additional resources may include WIC handouts or contact information about other WIC and community services.

Breastfeeding Counseling Over the Phone

For many mothers, telephone support provides an opportunity for them to ask questions, gain reassurance, or seek further assistance. Some mothers will be very clear about their concerns; others will require more open-ended questions to uncover the details of their concern.

Telephone counseling CANNOT adequately replace an in-person evaluation when:

- Breastfeeding is painful
- Baby is not gaining adequate weight
- Adequate information cannot be gathered

Telephone counseling will often cover issues such as newborn care, normal infant behaviors, breastfeeding and returning to work, or basic breastfeeding management techniques. Not all questions will be about breastfeeding. Many mothers will ask questions about parenting and baby-care issues, use of formula or complementary foods, or social concerns such as domestic violence. When providing breastfeeding counseling over the phone determine if a mother and/or baby need to be evaluated in person, how soon they need to be seen, and who should be the next to contact the mother. Telephone support cannot take the place of in-person evaluation and education, but it can be very effective.

Tips for Telephone Counseling

- Use the three-step counseling process of asking open-ended questions, affirming a woman's feelings, and educating.
- Allow the mother to share her story before offering recommendations.
- Provide information so that a woman can make an informed decision.
- Records the information received from the mother and documents the recommendations given to the mother.
- Confirm that the ideas discussed are practical and doable for the mother.
- Keep in mind that the mother may not share all the facts pertaining to her situation.
- Remember that in the absence of visual cues, the tone of voice and spoken words relay the message.
- When receiving a complicated call, check additional resources if necessary and call the mother back. Do not forget to follow-up.
- Call mothers in a timely manner in order to provide anticipatory guidance and follow-up as needed.

Guidelines for Referral

Breastfeeding women and infants with the following conditions should be referred to the Breastfeeding Coordinator: (If a Breastfeeding Coordinator is uncomfortable handling a particular situation, a further referral to a lactation specialist or an International Board Certified Lactation Consultant [IBCLC] is strongly recommended.)

Breastfeeding Women

- Women with plugged ducts, engorgement, mastitis, or sore nipples that have not healed within two days after intervention
- Women with inverted or flat nipples
- Women who re-lactate after one month (or more) weaning
- Women who plan to nurse an adopted infant
- Teenagers who are less than two years post menarche
- Women with any use of alcohol or controlled drugs (such as heroine, marijuana, cocaine, barbiturates or amphetamines)
- Women with routine use of prescribed medications
- Women who are mentally ill or impaired
- Women with past or present breastfeeding concerns
- Women with a history of breast surgery
- Women with a low milk supply
- Women who are mothers of multiples

Breastfed Infant Birth to 1 Year of Age

- Infants with congenital malformations, e.g. cleft lip and/or palate
- Infants who fail to gain weight, weight loss, failure to thrive, or slow weight gain (less than 4-7 ounces/week)
- Infants with special care needs which interfere with their normal functioning and development
- Low birth weight/premature infants (less than 4 lb)
- Infants with malabsorption syndrome, e.g. necrotizing enterocolitis, short gut

- Infants who are supplemented with special formulas requiring designated nutritionist's approval
- Infants with Down's Syndrome
- Infants with Jaundice
- Neurologically impaired infants
- Infants who fail to latch after intervention

Breastfeeding Women or Infants Birth to 1 Year of Age

- Chronic diseases with nutritional implications, e.g. renal, liver, heart disease
- Cystic Fibrosis
- Diagnosis of AIDS/HIV
- Inborn errors of metabolism such as PKU or galactosemia
- Metabolic disorders with nutritional implications, e.g. diabetes mellitus
- Hospitalized mother or infant

Culture and Counseling

Culture is defined as the values, beliefs, norms, and practices that are shared by members of the same group. Culture is a dynamic and on-going process which exerts a major influence on a mother's decision to breastfeed. It guides a woman's attitudes and ways of being and becomes patterned expressions of who she is. A woman's attitude toward breastfeeding is largely influenced by cultural beliefs and influences.

Common beliefs and practices that affect breastfeeding can be found across cultures.

- *Cold and Hot Theory/Yin and Yang Theory:* Women are urged to balance opposing forces such as hot and cold as a means to achieving good health. Cold or hot foods are often used to prevent and treat illnesses.
- *Postpartum Rest:* After giving birth, a period of rest is often prescribed for a specific length of time.
- *Colostrum:* In many cultures, mothers may discard colostrum believing that it is dirty or spoiled.

- *Food Recommendations:* Certain foods may be forbidden for a certain period of time following delivery while other foods may be encouraged to help increase milk supply.

To provide culturally sensitive care, health care providers need to

- Understand their own cultural beliefs and practices.
- Acquire basic knowledge of cultural concerns, health beliefs, and nutritional practices for the client groups they routinely serve.
- Be respectful and understanding of other cultures without being judgmental.
- Determine the level of fluency in English and arrange for an interpreter, if needed.
- Avoid body language that may be offensive or misunderstood.
- Speak directly to the client, whether an interpreter is present or not.
- Determine the client's reading ability before using written materials. Provide reading material in the client's language when possible.
- Build on cultural practices, reinforcing those, which are positive, and promoting change only in those, which are harmful.

Breastfeeding Promotion During Pregnancy

“The benefits to the mother of immediate breastfeeding are innumerable, not the least of which after the weariness of labor and birth is the emotional gratification, the feeling of strength, the composure, and the sense of fulfillment that comes with the handling and suckling of the baby.”

~Ashley Montague, (1905-1999)
anthropologist and educator

In many cultures prenatal breastfeeding education occurs through lifelong immersion in a culture where breastfeeding is normal and expected. In these environments, women assume they will breastfeed. Women often decide how they plan to feed the baby before the baby is born, and, if choosing not to breastfeed will often decide later in pregnancy. Mothers planning to bottle-feed may change their minds after listening to information about breastfeeding. Often, the earlier a mother chooses to breastfeed, the longer she will continue breastfeeding. It is important to educate women about breastfeeding as early and as often as possible during their pregnancy and to identify women and babies who may be at risk for potential difficulties.

Prenatal Breastfeeding Education

Discussion about breastfeeding should be initiated with all pregnant women, regardless of their current feeding plans. Women need to be given the tools and information to make an informed decision about feeding their baby. Addressing the barriers to breastfeeding and exploring a woman's beliefs about breastfeeding provides the opportunity to target the information to her concerns and individual situation.

Breastfeeding education during pregnancy should begin as early as possible and should build a woman's confidence in her ability to breastfeed successfully. Prenatal breastfeeding education should include the importance of breastfeeding and the risks of supplementation. It should also explore a woman's beliefs about breastfeeding and address any barriers or concerns she may have.

Breastfeeding education and promotion is provided for all pregnant women enrolled in the South Carolina WIC program. Prenatal breastfeeding education includes both individual and group counseling. Group breastfeeding counseling should detail the importance

OBJECTIVES

Identify effective approaches to prenatal breastfeeding education

List several prenatal indicators for breastfeeding problems

Identify birth practices that support breastfeeding

Discuss continued breastfeeding during pregnancy

of exclusive breastfeeding in the early weeks, explain the risks and hazards of not breastfeeding, explain how breastfeeding can be comfortable, provide information on community support, and build a woman's confidence in her ability to breastfeed. Individual breastfeeding counseling with pregnant women occurs with many different providers during the prenatal contacts. These individual counseling sessions do not need to be time consuming, but instead brief, focused discussions. All providers have a role in supporting and promoting breastfeeding and consistent breastfeeding education should be provided in small segments with each prenatal contact. The more often a pregnant woman hears positive and consistent information about breastfeeding, the more likely she is to breastfeed her baby.

“I saw a lot of people giving the breast, so I think maybe I give the breast.”

~ Pregnant Somali Woman

Prenatal Preparation for Breastfeeding

Conducting a breast and nipple evaluation during the prenatal period may be helpful. Marked asymmetry of the breasts in which the breasts are extremely different in size, and may appear tubular and widely spaced, may indicate lack of glandular tissue in one or both breasts. Flat or inverted nipples may cause difficulty with attachment. The absence of breast changes during pregnancy may also be a breastfeeding concern. Abnormalities should be noted; however, it is difficult to identify problems prenatally due to the many breast changes that occur during pregnancy. Potential “problems” should not be highlighted until an actual problem occurs. Prenatal preparation for breastfeeding, such as nipple toughening exercises, has not been shown to be effective and in many instances may cause problems. It is usually more important to evaluate a woman’s beliefs about breastfeeding or previous breastfeeding experiences.

Common Barriers to Breastfeeding

- Lack of confidence
- Embarrassment
- Returning to work or school
- Concerns about dietary and health practices
- Lack of social support
- Fear of pain

Breastfeeding During Pregnancy

Mothers may be concerned about breastfeeding during pregnancy; however, there is no need to wean when a mother becomes pregnant. Nipple soreness is often reported and a mother’s milk supply may decrease or change in flavor mid-pregnancy which may lead to self-weaning. If there is a concern regarding preterm labor, the mother should consult with her health care provider about the safety of breastfeeding during pregnancy. If a mother desires to wean once she discovers she is pregnant, abrupt weaning should be avoided.

Tandem Nursing is a situation in which two children of different ages are nursing during the same period of time. Tandem nursing usually occurs after a mother has breastfed through her pregnancy. Generally, the other child does not need to stop breastfeeding when the baby is born. Mothers should feed the newborn first and then the older child. The mother will produce enough milk for both children if she eats well and gets adequate rest. Breast milk may be a significant part of the child’s diet and continues to offer comfort, security, and immunological benefits. Abrupt cessation of breastfeeding should be avoided.

Breastfeeding and Birthing Practices

Discussing the effect of birth practices on infant suckling and breastfeeding allows women to make informed choices about the birth of their baby. Newborns display an incredible ability to self-attach to the breast within a short period of time following birth. If an infant is left on the mother’s tummy, dried off and kept warm with skin-to-skin contact, the infant usually begins a sequence that ends up with proper attachment at the breast. This early skin-to-skin contact and breastfeeding within the first few hours of birth has been shown to increase exclusive breastfeeding, the duration of breastfeeding, and mother-infant bonding.

Continuous support during labor and delivery is one of the key components in increasing early skin-to-skin contact and breastfeeding initiation. Multiple studies have indicated that women who receive labor support are more likely to practice exclusive breastfeeding, to breastfeed on demand, and have greater breastfeeding success. Women who are not continuously supported during birth may have longer labors, higher use of pain medications and prolonged hospitalization of the infant. They may also experience a higher incidence of inductions, cesarean sections, forceps delivery, and maternal fever. In response, infants often display decreased breast massage-like movements, hand to mouth movements, rooting, hand to nipple movements, licking, and suckling. This often leads to a decrease or delay in breastfeeding.

Birth practices that may have a negative effect on breastfeeding:

- Narcotic analgesia has been associated with a delay in effective suckling
- Epidural anesthesia has been associated with decreased motor abilities of the newborn and a decrease in hand motions and sucking within the first hours following birth
- Gastric suctioning may delay suckling and rooting
- Eye drops can impair an infants ability to self-attach. Routine administration should be delayed until after the first breastfeed.

Breastfeeding Following a Cesarean Section

Women can breastfeed following a cesarean section. A mother who has had a cesarean section will be recovering from major abdominal surgery and may need additional support and encouragement.

- If both mother and baby are healthy, breastfeeding may begin in the recovery room or as soon as the mother is able to hold her baby.
- If mother and baby are separated after delivery, breastfeeding may begin as soon as they are reunited.
- Use careful positioning to avoid putting pressure on the incision. The side-lying and underarm (football) holds, are often comfortable breastfeeding positions following a cesarean section.
- If necessary, encourage the mother to discuss pain medications that are compatible with breastfeeding with her health care provider.

Birth Practices that Support Breastfeeding

- Early skin-to-skin contact
- Initiating breastfeeding within the first hour of birth
- Labor and birthing support
- Rooming-in

MODULE II

Breastfeeding Management

Anatomy & Physiology of Lactation and Milk Supply

“A pair of substantial mammary glands have the advantage over the two hemispheres of the most learned professor’s brain in the art of compounding a nutritive fluid for infants.”

~Oliver Wendell Holmes, (1809-1894)

American 19th century physician, professor, lecturer and author

In order to effectively support women and infants in breastfeeding, one must understand how the breast produces, releases, and maintains milk and how the infant transfers the milk. Understanding the anatomy and physiology of the breast and the effect of infant suckling on milk supply is crucial to effective breastfeeding counseling.

External Breast Anatomy

Breasts and nipples are many different shapes and sizes. Breasts may be large or small, firm or pendulous. Nipples are made of muscles and nerves and contain openings for milk to exit the nipple. Nipples may protrude outward, be flat, dimpled or inverted. The amount of milk produced by the breast is not related to the size or symmetry of the breasts or the shape of the nipple. Marked asymmetry of the breasts may indicate a problem; however, and should be followed.

On the outside of the breast is the areola, a darkened area around the nipple. The size and color of the areola varies. The areola enlarges and darkens during pregnancy and lactation. On the areola are the Montgomery Glands. The Montgomery Glands secrete an oily substance which lubricates and protects the nipples and areola and are a source of the mother’s smell and help the baby to find and self-attach to the breast.

Internal Breast Anatomy

The breast is made up of glandular tissue, supporting connective tissue and protective fatty tissue. Fat and supporting tissue give the breast its size and shape. The smallest functional unit of the breast is little sacs of milk-producing cells called the alveoli. A network of blood vessels around the alveolus brings the nutrients to the cells to make milk. Surrounding each alveolus are muscles called myoepithelial cells that contract to squeeze the milk out into the ducts. Until very

OBJECTIVES

Describe the anatomy of the breast and physiology of lactation

Describe the role of hormones in establishing and maintaining lactation

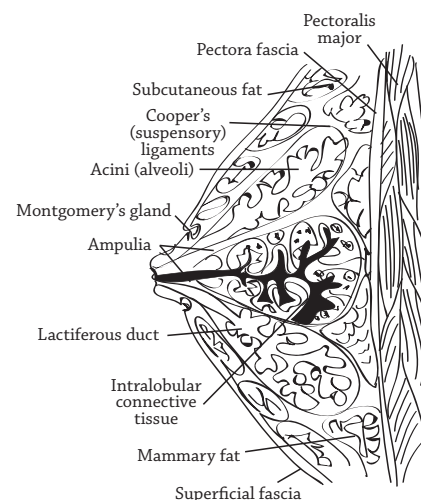
Describe the effect of suckling on establishing and maintaining a milk supply

Identify signs of adequate milk supply and intake by the infant

Discuss methods of maintaining a healthy milk supply

recently, it was believed that besides being stored in the alveoli, milk was also stored in lactiferous sinuses, widened areas in the ducts just behind the nipples. However, recent ultrasounds studies have shown that lactiferous sinuses are not permanent structures in the breast (Kent 2002) The milk ducts just behind the nipple widen in response to the milk ejection reflex, but narrow again when the feeding is over and the milk moves back into the alveoli.

There are roughly 4-18 ducts which branch close to the nipple and exit through pores in the nipple. Nerves transmit messages from the breast to the brain to trigger the release of lactation hormones.



Breast Development

Women's bodies are designed to produce milk for their infants. Early breast development begins in utero and continues through puberty. During menstruation, hormones continue to stimulate the development of breast tissue. Pregnancy then stimulates the growth of the ductal and lobular-alveolar systems. The final stage of breast development occurs during lactation. Milk supply is then maintained through an intricate relationship between mother and baby.

Hormones of Lactation

The first stages of milk production are under the control of hormones or chemical messengers in the blood. During pregnancy, hormones help the breasts to develop and prepare for breastfeeding. The delivery of the placenta causes a drop in the hormone levels of progesterone. This triggers the breast to begin making milk. Milk is then released into the alveolar system and then into the ducts.

Prolactin

Prolactin is responsible for milk production and is released in response to nipple stimulation. It stimulates the alveoli to produce milk and works following a breastfeed to make milk for the next feeding. Prolactin is high at night and therefore, breastfeeding at night provides for more prolactin to be secreted and increase milk production. Prolactin levels remain high throughout breastfeeding, but gradually decrease during the first three months postpartum, and are lowest when the breast is full.

Oxytocin

Oxytocin is responsible for releasing the milk. The releasing of milk is also called the milk ejection reflex (MER) or letdown. It causes the small muscles surrounding the alveoli to contract producing the milk ejection reflex and may occur several times during a feeding. Oxytocin is released in response to nipple stimulation. Seeing, hearing, smelling, or touching the infant or hearing another infant cry, can also stimulate oxytocin release. Oxytocin can be inhibited by extreme pain or stress, and is often called the "mothering hormone" and may make a mother feel sleepy or relaxed.

New Breast Anatomy Research (Ramsay et al, 2005)

- Complex ductal works are not always in a symmetrical pattern
- 4-18 (avg. 9) ducts exit the nipple
- Branching of the ducts occurs close to the nipple
- Conventionally described 'lactiferous sinuses' do not exit
- 65% of glandular tissue is within 30 mm of the base of the nipple
- Ratio of glandular to fatty tissue is 2:1

Signs of an Active Oxytocin Reflex

- Uterine contractions
- Sudden or extreme thirst
- Milk spraying or leaking from the breast
- Feeling a squeezing or tingling sensation in the breast (some women may not feel any physical sensation of the milk release)

Effect of Suckling

Adequate milk supply is established through suckling and emptying of the breast. Milk supply is based primarily upon infant demand. To ensure adequate milk production, milk must be removed from the breast effectively. The more frequent the milk removal, the faster the milk is produced. Over fullness of the breast creates pressure which decreases the production of milk. A decrease in milk supply is often due to inadequate suckling. Maternal age, nutrition, and fluid intake are minor factors in milk supply, while malnutrition does not seem to affect milk volume.

Examples of Inadequate Suckling and Stimulation

- Infrequent or brief feedings
- Scheduled rather than demand feedings
- Lack of nighttime feedings
- Delayed feedings due to sore nipples
- Ineffective attachment at the breast
- Poor or weak suck

Signs of Adequate Milk Supply

Many women who discontinue breastfeeding during the first six months cite insufficient milk as their reason for weaning. Changes in breastfeeding patterns, difficulty with milk expression, a fussy baby, and decreasing fullness of the breast may cause mothers to worry about their milk supply. This perception may be different than the baby's actual intake of milk. Determining a mother's milk supply and ensuring adequate weight gain of the infant may include multiple levels of assessment. Several things should be assessed in order to determine if the healthy full term infant is receiving adequate breast milk.

Milk Intake

The size of an infant's stomach correlates with the amount of milk production. On the first day of life, the infant's stomach is only about the size of a marble, with a capacity of about 5-7ml. The marble sized stomach is ideally suited for early feedings of colostrum. By day three, the infant's stomach has grown to

the capacity of about 0.75 to 1-ounce. By day seven, the infant's stomach can now hold roughly 1.5 to 2- ounces and is about the size of a ping-pong ball. Frequent feedings assure that the baby will take in adequate breast milk and milk production will continue.

Test weighing is a tool that can help to estimate milk intake. A baby is weighed both before and after a breastfeed, under identical conditions. A digital scale which can be calibrated and measures to the nearest tenth of an ounce should be used when conducting test weights. Test weighing must be used with caution. Although test weighing can help reassure a mother of a good milk supply or identify breastfeeding concerns, it can also discourage mothers and lead to premature weaning if used incorrectly.

Breastfed babies should have 6-8 wet diapers and 2-5 dirty diapers per 24 hours.

Average Intake per Breastfeed

- Birth -24 hours: ¼ oz.
- 24 hours -2 weeks: 1-1.5 oz.
- 2 weeks -1 month: 1-3 oz.
- 2-4 months: 3-4 oz.
- 2-6 months: 4-5 oz.

Wet and Dirty Diapers

Adequate wet and dirty diapers are a good sign that breastfeeding is going well. An infant receiving adequate breast milk will be urinating regularly. The urine should not be yellow or concentrated, but clear. During the first day or two after birth, the baby may have only one or two wet diapers. Beginning on the third or fourth day, the baby should have at least six to eight wet diapers.

Stool patterns of breastfed infants go through several changes during the first week of life. Over the first day or two after birth, the baby will pass meconium, a greenish-black tarry stool. By about day three, the stool transitions from the dark tarry meconium to a green transitional stool. By about day five, the stool becomes soft, seedy, and yellowish in color. Once the stools turn yellow, breastfed babies should have at least two to five bowel movements each day. Some babies may stool following each feeding. By about six weeks of age, some infants may have less frequent, but larger, soft, stools each day.

Weight Gain

If the baby is receiving adequate breast milk, then the baby will gain adequate weight. Normally a baby will have an initial weight loss after delivery. The breastfed baby should not lose more than seven percent of their birth weight and should regain birth weight by 7-14 days. Excessive weight loss, delayed regain of birth weight, or signs of dehydration may indicate a delay in milk production or low milk intake and an inperson evaluation or referral should be conducted. Once the mother's milk supply becomes more plentiful on the third or fourth day, the baby should gain about a half an ounce to an ounce per day or 4-7 ounces per week.

Breastfed babies tend to grow more rapidly during the first few months of life and less rapidly during the second half of the first year. At one year of age, breastfed babies tend to be leaner than formula-fed babies. Current growth charts are based on the growth of formula-fed infants and do not accurately reflect the normal growth patterns of breastfed infants. The difference in growth patterns between breastfed and formula-fed infants may lead to unnecessary supplementation in breastfed infants.

The WHO has recently released new growth charts, which establish the breastfed infant as the biological norm for growth. The Department of Health and Human Services and the American Academy of Pediatrics are currently considering the use of the WHO charts versus the 2000 CDC growth charts and are developing guidelines for use within the US population. See Appendix H for the CDC growth charts.

Breastfed babies should gain about ½ oz.- 1 oz. per day.

Inadequate Milk Supply

If an infant has a weight loss of more than 7% during the first 72 hours or a weight loss of 10% of his birth weight, the infant should be followed closely. A referral should be made to the breastfeeding coordinator. After receiving the referral, the coordinator will determine if follow-up is needed from a registered dietitian and health care provider. Assessment of inadequate milk should include an in-person evaluation of the baby suckling at the breast. In addition to improved attachment at the breast, other factors such as maternal infection or medication, stress of the mother and anatomical abnormalities of the mother or infant should be considered. Babies who do not receive enough calories are sleepier and give fewer feeding cues, further complicating the milk supply cycle. The plan of action should be in response to the assumed reason for the inadequate milk supply. Breast pumping and nipple stimulation may help to increase a mother's milk supply. Frequent feedings and follow-up with a health care provider should be suggested. A hungry, underweight infant may be offered the breast first at each feeding, but may need to receive supplementation

as well. Supplementation, if needed, is often temporary and support about continued breastfeeding should be provided to the mother.

Helping to Ensure Adequate Milk Supply

Increasing the frequency or duration of breastfeeding and improving latch and positioning often increases milk supply. Ensuring an adequate milk supply may also encourage women to:

- Breastfeed within the first hour after birth
- Breastfeed exclusively
- Breastfeed on demand, frequently, and as long as the baby wants to feed
- Feed the baby at night when prolactin levels are particularly high
- If baby is unable to feed at the breast, express milk so that milk production will continue
- Practice skin-to-skin contact, as this has been shown to increase milk supply

Galactagogues

Certain medications or herbal remedies may increase or enhance milk production. The most common use of galactagogues is in induced lactation and relactation or when a mother is experiencing a decrease in milk supply. Common galactagogues include:

- Metoclopramide (Reglan)
- Domperidone (not currently available in the US)
- Fenugreek (herb)

Galactagogues are generally for short term use and are usually recommended in combination with increased breastfeeding or milk expression. Galactagogues should only be recommended in consultation with a lactation specialist or under the care of a health care provider.

Breastfed babies should not have a weight loss of more than 7% during the first 72 hours or a weight loss of 10% from birth weight.

Breastfeeding Assessment

“Public health leaders say the weight of the scientific evidence for breast-feeding has grown so overwhelming that it is appropriate to recast their message to make clear that it is risky not to breastfeed.”

~Roni Rabin

New York Times Columnist

Helping mothers give breastfeeding a good beginning is crucial to long term breastfeeding success. Assessing a breastfeed in-person can offer insights into the breastfeeding relationship that are not available in telephone counseling. Breastfeeding evaluations provide an opportunity to identify difficulties or give positive feedback if the mother and infant are doing well.

A breastfeeding assessment involves observing a breastfeed and listening to the mother’s thoughts and concerns. Observing a mother and baby breastfeeding before offering suggestions for improvement is always helpful. Some women and infants will need more assistance and time than others. To get a baby well attached to the breast often takes several times. Some mothers and babies may need an additional visit. When assessing a breastfeed, note the three key observation points: the position of the mother, the position of the baby, and the position of the mouth-or suckling and latch. Ask a mother how breastfeeding feels to her, as this may provide valuable insight.

Mother’s Position

The mother should be in a comfortable position with her back well-supported. The mother’s hand position should not interfere with the baby’s attachment at the breast or latch-on. The mother should not be experiencing any breast or nipple pain or discomfort while breastfeeding. Women may sit, stand, walk, or lie down while breastfeeding.

Baby’s Position

Many comfortable positions are acceptable for infants to be fed at the breast such as in the bend of the mother’s elbow, under her arm, along her side, or straddling her leg. There may be times when a mother or infant needs to use creative positioning such as when draining a plugged duct or feeding a baby with a cleft

OBJECTIVES

Recognize effective positioning and attachment at the breast

Describe the results of poor attachment at the breast or ineffective suckling

Identify effective strategies for conducting a breastfeeding assessment

lip/palate. Whatever position is used it is important to remember several key points. The ear, shoulder, and hip need to be in a straight line so that the baby’s head and neck are not twisted. The baby needs to be held close to the mother’s body with the whole body supported, not only the head and neck. The baby should approach the breast nose to nipple, rather than lower lip or chin to nipple. The baby should be brought to the breast (never forced), rather than the breast brought to the baby. The baby’s lower arm may be placed around the mother’s side or swaddled, if necessary.

Positioning Key Points

- Baby’s ear, shoulder and hip should be in line
- Baby should be held close to the mother with the whole body supported
- Baby should approach the breast nose to nipple
- Baby should be brought to the breast

Common Breastfeeding Positions

Cradle Hold

The infant is cradled in the mother's arm closest to the breast with the infant's head in the crook of her arm. The baby's body should be facing the mother with the lower arm tucked around the mother's side. The mother's opposite hand may be used to support the breast.

cradle



Cross-Cradle Hold

The infant is held with the arm opposite the breast extending along the length of the infant's back and neck. The mother holds the infant's head to help stabilize its position. The arm closest to the breast may be used to help support the breast. This position is useful for a small or ill baby.



cross-cradle

Side-Lying Hold

For this position, the mother lies on her side with the baby facing her. The baby's nose should be level with the mother's nipple. This position is often comfortable for the mother following a cesarean section and helps a mother to rest.

side-lying



Underarm Hold (football hold)

The baby's back and shoulders are held in the palm of the mother's hand. The baby is tucked up under the mother's arm on the side of her body. The mother may help to support her breast with the opposite hand. This position is useful for twins or infants who need extra support.



football

Dancer Hand Position

The baby is held with the arm opposite the breast. The hand on the same side as the breast cups the breast with the thumb on one side of the breast, the palm of the hand beneath the breast, and the other three fingers on the other side of the breast. The index finger is then used to support the baby's lower jaw while breastfeeding. This position is useful for premature infants or babies with low muscle tone who need additional chin support.

Mouth Position (latch-on)

The position of the baby's mouth is key to attachment and suckling at the breast. The baby must be properly attached to the breast in order to compress the milk ducts and remove the milk effectively. Breastfeeding should be comfortable and pain-free for the mother and the baby should transfer milk when effectively suckling at the breast. The baby should have an asymmetrical latch where more areola is visible above the baby's mouth than below. The baby's mouth should be wide open with the upper and lower lips turned out and the chin touching or nearly touching the breast. The infant's tongue should reach over the gum ridge, cup the breast, and stay at the front of the mouth, behind the lower lip. Once the infant forms a seal, the tongue should move in a wave-like motion, expressing milk from the milk ducts into the baby's mouth.



Use your nipple to tickle your baby's upper lip until his mouth is open wide.



Pull your baby onto your breast so that he takes the whole nipple and about 1 inch of your breast into his mouth. His lips should be turned outward.

Latch Key Points

- Latch should be **ASYMMETRICAL**
- Mouth wide open
- Upper and lower lips turned out
- Chin touching or nearly touching the breast
- Tongue reaching over the gum ridge and cupping the breast
- Once a seal is formed, tongue moves in a wave-like motion

Signs of Effective Suckling

- The baby may begin the breastfeed with short, rapid sucks but should develop a rhythmic suck, swallow, breathe, pattern of slow, deep sucks with periodic pauses.
- The infant's cheeks should be smooth or rounded, without dimpling.
- Swallowing should be seen or heard
- The baby should release the breast and appear content and satisfied.
- The baby may appear more relaxed or fall asleep following a breastfeed.

Results of Poor Attachment

If a baby is poorly attached at the breast she will not suckle efficiently or transfer adequate milk. The results of poor attachment may include sore, cracked and bleeding nipples, engorgement or a low milk supply due to inadequate emptying of the breast. This results in a fussy or unsatisfied infant or slow weight gain in the infant. A mouth that is not open wide, upper or lower lips that are turned in, dimpled cheeks or a symmetrical latch in which equal amounts of areola are seen above and below the infant's mouth (or more areola below) are signs of poor attachment at the breast. A mother may report pain or discomfort when her baby is poorly attached at the breast, though some women will not experience soreness with a poor latch. Poor attachment and transfer of milk may be evident if the infant is fussy at the breast or is not content following the feeding.

Cluster feeding is common in which a baby breastfeeds several times close together followed by a longer stretch where he may fall asleep; however, breastfeeding difficulties may exist if a baby feeds more often than every hour or more than an hour every day.

Breastfeeding Assessment

When conducting an in-person consultation to assess a breastfeed, identify signs of concern as well as ideal breastfeeding behaviors. The Breastfeeding Assessment Tool, which is discussed further in Module IV, Documentation, outlines key observation points to consider when conducting a breastfeeding assessment. Interventions should only be recommended if there is a breastfeeding difficulty.

Observation of Mother and Baby

When beginning a breastfeeding consult, do a quick assessment of both mother and baby. Does the mother appear healthy or is she ill or depressed? Does she appear calm and comfortable or tense and uncomfortable? Are there notable signs of bonding and attachment between the mother and baby? Does the baby appear healthy or is the baby ill or sleepy? Is the baby in a calm and quiet alert state or is the baby restless or crying? Does the baby show feeding cues and root for the breast?

Breast Appearance

Observation of the mother's breast can give insights into breastfeeding difficulties and may help to uncover concerns. When examining the breasts, first ask questions, then look, and last, feel if necessary. In general, touching a woman's breasts is not necessary when conducting an assessment. Do the mother's breasts look healthy and intact or are they red, swollen, or sore? Does the mother experience any breast or nipple pain during the breastfeed? Is scar tissue present? Are the mother's breast well supported with her fingers away from the nipple or does she hold her breast with her fingers on the areola?

Baby's Position

Proper alignment and support of the baby's position is crucial. Is the baby's head and body in line or does the baby twist his or her neck to feed? Is the baby held

close to the mother? Is the baby's whole body supported during the feeding or only the head and neck? Does the baby approach the breast, nose to nipple or lower lip/chin to nipple?

Latch

Latch is important to maintaining milk supply. Is more areola seen above the baby's top lip or below the baby's bottom lip? Does the baby have a wide gape and open his or her mouth wide? Are the baby's upper and lower lips turned outwards or turned in? Is the baby's chin touching or close to the mothers' breast or is it not touching the breast?

Suckling

There are several key points to assess when observing the suckling. Does the baby take slow, deep sucks with pauses or rapid shallow sucks? Is audible swallowing heard? Are the baby's cheeks smooth or rounded or pulled in and dimpled? Does the baby release the breast when finished or does the mother take the baby off the breast?

Tips for Conducting a Breastfeeding Assessment

- Observe a mother and her baby breastfeeding before offering assistance.
- Only offer assistance if you note signs of concern.
- Help build confidence in a woman's ability to breastfeed by offering praise and encouragement.
- If you notice a difficulty, offer suggestions and give options for what might help.
- If necessary, show her how to hold and position her baby and how to support her breast.
- Explain proper attachment at the breast.
- Ask how it feels and look for signs of good attachment.
- Develop a plan that the mother can understand and implement.
- Provide follow-up as needed and make referrals when appropriate.

Milk Expression and Alternative Feeding Methods

“In the very act of lactation there is, by nature, generated such an endearment of the suckled child to the nurse, as that she began it perhaps only for hire, finds herself engaged by a growing affection to supply in some measure the place of the mother to the orphan or deserted babe.”

~Elizabeth Nihell
18th Century Midwife

Mothers and babies may be separated for various reasons such as a hospitalization or severe illness of mother or baby, when mothers return to work or school, or for occasional outings. A mother can continue to provide breast milk to her infant during times of separation. Helping women to maintain their milk supply while they are separated from their infants can increase the duration of their breastfeeding experience.

Ideally, infants should be fed at the breast within the first hour following delivery. In the event that a mother and baby are separated after birth or are not able to breastfeed at the breast, providing expressed breast milk (EBM) is the next best choice. When it is not possible for a mother to provide EBM to her infant, human donor milk may be used. Supplements such as water, glucose water, and formula should only be used when ordered by a physician when a medical condition exists. In order to establish and ensure an adequate milk supply when mothers and infants are separated, mothers must learn how to express their milk.

Hand Expression

All mothers should be taught hand expression. To teach hand expression, it is not necessary to touch a woman's breast. Hand expression can help to relieve engorgement or a plugged duct. It can also help to encourage a baby to breastfeed by expressing a few drops of milk onto the nipple or softening the areola so that the baby can attach at the breast. Hand expression can also be used to express milk directly into the mouth of a baby with a weak suck. Many women find hand expression easy to learn and may even prefer it over a manual or electric pump. Many women develop their own techniques for hand expression. The more a mother uses and practices hand expression, the faster and more comfortable she will become.

OBJECTIVES

Instruct mothers on how to establish and maintain a milk supply when the infant cannot feed at the breast

Demonstrate how to hand express

Identify different methods of milk expression and proper storing techniques

Describe the risks and benefits of alternative feeding methods

To Hand Express:

- Using small, circle-like motions, massage the breast to help get the milk flowing. Move the hands all around the breast from the chest to the nipple. Warm washcloths or a warm bath or shower may help.
- With the thumb on top of the breast and the first two fingers under the breast, gently hold the breast about 1 inch behind the nipple. Press back toward the chest wall, then roll the fingers and thumb toward the nipple.
- Gently squeeze while rolling the fingers forward. Repeat the pressing and rolling motion, moving the fingers to a new position all the way around the breast. If the milk flow seems to slow down, repeat the massage and try a new position for expression, or express from the second breast. Then go back to the first breast until the flow slows.
- Be gentle and avoid squeezing or pulling on the nipple. Also, do not slide the hands over the breast. Practice for the first time after the baby has nursed while the milk is already flowing. Early in the morning is another good time to try.
- Repeat the process of milk expression and massage until the milk ducts are drained.



Breast Pumps

Breast pumps may be hand-held devices or electric and may pump one breast at a time or both breasts simultaneously. Women should consult their health care providers or lactation specialists for assistance in choosing the most appropriate breast pump. When choosing a breast pump, several factors should be considered. Women pump for occasional outings, returning to work, or sometimes for a hospitalized baby. The mother's pumping location should be considered as well as the frequency. A mother also needs to consider the portability, price or availability of the pump. The FDA has recently published a website to assist women in choosing a breast pump. This information can be located at www.fda.gov/cdrh/breastpumps.

Regardless of the type of pump that is chosen, ensure that breast shields fit correctly. Medela, a breast pump and breastfeeding accessory supplier, has identified five criteria for proper fitting of breast shields:

- The nipple moves freely in the tunnel
- Minimal or no areola tissue is pulled into the tunnel
- There is gentle, rhythmic motion in the breast with each cycling of the pump
- The breast empties all over
- The nipple is not painful or traumatized

Manual Breast Pumps

Manual breast pumps are designed to be used by mothers with a well-established milk supply. They are suitable for occasional separation of mother and baby or to relieve discomfort from full breasts. Manual breast pumps are not designed to maintain or establish a milk supply as they do not provide adequate suction or nipple stimulation.

A manual breast pump creates suction by squeezing and releasing with a one-hand motion. Most manual breast pumps empty one breast at a time and may require two hands to operate. Pedal pumps are another type of manual pump. Instead of using the hand, a collection kit is attached to a pedal device that can be worked with the foot. The mom can pump one breast or both breasts at a time when using a pedal pump.



When Choosing a Breast Pump Consider

- Reason for milk express
- Location
- Frequency or duration
- Portability
- Availability or price

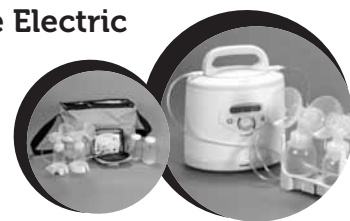
Manual breast pumps, which use a rubber bulb or bicycle horn are not recommended. They may pull milk into the bulb, are difficult to clean, and can become easily contaminated with bacteria. The suction is also difficult to control the suction, which can result in nipple pain or damage.

Battery-Operated or Mini-Electric Breast Pumps

Single electric pumps may be battery-operated or plugged into an AC current. These pumps are convenient, portable; pump one breast at a time and a mother can usually operate the pump with one hand. This pump is also designed for a mom with a well established milk supply. They are relatively quiet, but the suction can be sluggish. This pump is designed for occasional use, when the mother is away from her infant for a night out or a couple of hours during the day.

Personal-Use Double Electric Breast Pumps

Double electric pumps automatically create suction and allow the mother to control the rate and level of suction. Most can be plugged into AC current, have optional battery packs, or lighter adaptors for use in vehicles. Double electric pumps are ideal for women who have established a good milk supply and need to pump several times each day. These pumps work well for women returning to work or school who desire to continue to breastfeed. They can be used for successive babies, but should not be shared by other mothers.



Hospital Grade Electric Breast Pumps

Hospital grade electric breast pumps are very effective for breast milk expression, but can be expensive. Hospital grade electric pumps provide the best stimulation for establishing and keeping up a good milk supply, which may be important to a mother with a premature or ill baby who cannot breastfeed. Hospital grade electric pumps are designed to be used by multiple users. Individual mothers have their own kit with personal breast shells and tubing. Hospital grade electric pumps are available with “single” or “double” pump kits and can be obtained by rental and do not have to be purchased.

Establishing and Maintaining Milk Supply

If a newborn is unable to feed at the breast following birth, milk expression with a hospital grade breast pump should begin as soon as a mother has recovered from childbirth. The frequency, or number of pumping sessions per day, should be similar to the breastfeeding pattern of a healthy newborn and should include 8-12 pumping sessions per day. Mothers should pump both day and night and should not exceed three hours between pumping sessions. Pumping more times each day will help to increase milk supply more than increasing the duration of each pumping session. Pumping both breasts at the same time also may help to increase milk supply as this increases prolactin levels, the milk producing hormone. Pumping sessions should last 15-20 minutes when doing both breasts at the same time.

Milk Storage

Once breast milk is expressed, the milk should be stored properly. Store milk in clean containers and at appropriate temperatures to avoid contamination. Cleaning the breast prior to milk expression is not necessary; however, hand washing may reduce the risk of contamination of the breast milk. Breast pumps and collection kits should not be shared.

Breast milk should be stored in glass or plastic bottles that are Bisphenol A- Free (BPA) and can be sealed air tight. Plastic bags designed for breast milk storage may be used for short-term use, but are more easily contaminated and breast milk components may adhere

Tips for Milk Expression

- One breast may produce more milk than the other.
- The milk ejection reflex (MER) is stimulated by the senses (touch, sight, smell, sound). Encourage a mother to think about or look at her baby (even a photo) to help elicit the MER.
- Continue pumping after the first MER is over. Pauses will occur when no milk flows, then another MER will occur and more milk will flow.
- Encourage the mother be relaxed and comfortable.
- Practice breast massage and gently stimulate the nipple to help elicit the oxytocin reflex.
- The more often a woman practices milk expression, the easier it will become.
- Pumping or hand expression should not be painful. If a mother reports pain or discomfort, an evaluation may be necessary.
- If a mother is getting little or no milk when pumping, assess the pump and try relaxation techniques to elicit the oxytocin reflex. Do not assume the mother has no milk.
- When pumping, try to simulate the infant's suck pattern at the breast: short, rapid sucks followed by deep, slow suction once the milk is flowing

to the bag. Store breast milk in amounts similar to what the baby takes at a feeding to minimize waste. The antibacterial properties of breast milk allow it be safely stored at room temperature, refrigerated, or frozen.

Label the expressed breast milk with the amount and date and use the oldest milk first. Frozen breast milk can be thawed slowly in a refrigerator overnight or placed in a pan of warm water. Frozen breast milk should never be microwaved as this may alter the anti-infective properties and cause uneven heating. Breast milk that has been frozen and thawed should be used within 24 hours or discarded; it should not be re-frozen. Breast milk may separate with the fatty layer going to the top when it is stored or thawed. This is normal and does not mean that the milk has spoiled. Gently shake the milk to mix it together.

Breast Milk Storage for the Healthy, Term Infant

Stored at room temperature (Not more than 77°F)	Refrigerator (40°F or below)	Freezer (Temperature varies 32°-0°F depending on freezer type)		
Use within 4 hours	Use within 72 hours/3 days	Freezer compartment (mini-refrigerator) Use within 2 weeks	Freezer with a door separate from refrigerator Use within 3 months	Chest or upright freezer unit Use within 6 months

Alternative Feeding Methods

When a baby cannot feed at the breast, alternate feeding methods may be used to feed the baby. The need for an alternative feeding method should be individually assessed. EBM should be used whenever possible.

The WHO does not officially recognize “nipple confusion;” however, some babies may develop a preference for a certain feeding method. If breastfeeding has not yet been well established, bottles and artificial teats, such as pacifiers, should be avoided.

When using any of the alternative feeding methods, a skilled lactation specialist should be consulted and follow-up by a health care provider should be provided. Complications can result if the techniques are not done correctly. Mothers need to be taught in a way they understand so that they can use alternative feeding methods appropriately and the baby should be transferred to the breast as soon as possible.

Nursing Supplemter

A Supplemental Nursing System (SNS) allows the infant to receive supplemental feedings at the breast. A nursing supplemter helps to ensure that the baby receives enough milk while encouraging the baby to suckle at the breast. To use a nursing supplemter, the baby must be able to attach to the breast and suckle. A plastic pouch or container, which holds breast milk or supplement, is attached to flexible tubing that is

placed on the mother’s nipple. The infant is then able to receive the supplement while stimulating the nipple and areola. The SNS helps to stimulate increased milk production and offers the closeness of feeding at the breast. The SNS can assist 1) a woman whose infant needs supplemental feedings, but wants to continue breastfeeding, 2) relactation, 3) when an infant has a weak suck, or 4) when building up a low milk supply.

When choosing an alternative feeding method consider

- Abilities of the infant
- Mother and infant anatomy and physiology
- Confidence level, patience and perseverance of the mother

Syringe Feeding

A syringe or dropper can be used for small amounts of milk such as colostrum. These small amounts of milk are beneficial and should not be dismissed. When using a syringe or dropper, place a small amount in the baby’s cheek and allow the baby to swallow before giving more.

Finger Feeding

Finger feeding allows the infant to suck, can be used to help correct an uncoordinated suck and allows the infant to participate in the feeding by pacing the speed and amount of the feed. When finger feeding, gently introduce a clean (or gloved) finger into the infant's mouth. Place the finger with pad side up, slowly working it back to the space between the hard and soft palate. If the baby resists, remove the finger slightly until the baby is comfortable. Then gently continue to move the finger back toward the soft palate. Place a feeding tube device next to the finger. When the infant sucks, reward correct sucking with a small amount of milk.

Medicine Dropper

A medicine dropper can be used when a baby is not able to feed at the breast. When using a spoon or dropper, place the medicine dropper slightly inside the infant's mouth. Some babies prefer it between the cheeks and gums and others prefer it inside the lower lip. Gently squeeze a small amount of milk into the infant's mouth, allowing the baby to swallow before giving more. Most infants gradually become more efficient and take in more milk with each swallow.

Cup feeding

Cup feeding can be used for infants who can swallow, but may not suckle well at the breast. Cup feeding allows the infant to control the amount and rate of the feeding and encourages a coordinated suckswallow-breathe rhythm. A spoon may also be used.

To cup feed, follow the steps below:

- Support the baby in an upright position.
- Rest the cup gently at the baby's lower lip.
- Tip the cup so the milk just reaches the baby's lips.
- Allow the baby to lap up the milk or take small sucks.
- Allow the infant time to swallow and pace the feeding.
- Do NOT pour the milk into the infant's mouth.

Bottles

If supplementation or EBM is necessary in the early weeks of breastfeeding, alternative methods of feeding should be tried prior to the introduction of the bottle. The use of bottles has been associated with sore nipples and the early cessation of breastfeeding. Infants use a different suckling technique to breastfeed than when they use a bottle. This can cause a baby to suckle or attach incorrectly to breast, causing sore nipples or poor milk removal. The use of bottles also limits the infant's time at the breast, often decreasing demand feedings.

When feeding the baby a bottle, use paced, bottle-feeding. This is a useful practice for formula-fed and breastfed babies receiving a bottle. It can help to simulate the breastfeeding experience and allows the infant to be more of an active participant in the feedings.

Paced Bottle-feeding

- Hold the infant in an upright position, switch positions mid-feeding, and use lots of skin to skin contact.
- Allow the infant to take in the nipple, being sure that the infant's lips cover the broad part of the nipple and the mouth is open wide.
- Hold the bottle in a horizontal position to slow down the flow of milk.
- Allow the infant to take 8-10 sucks, then gently remove the nipple from the infant's mouth and pause, before allowing the infant to take the bottle nipple back into their mouth. Some infants may prefer to feel the nipple resting on their upper lip during the breaks.
- Repeat this pattern until the infant is no longer interested.
- Feedings should take about 15-20 minutes.

Other Breastfeeding Devices

Breast Shell

Breast shells are a two-piece, hard plastic device which includes an inner donut-shaped portion and outer portion with multiple holes. Breast shells may be used to provide temporary relief for sore nipples and to prevent clothing from sticking to the tender skin. Research has not concluded that the wearing of breast shells during pregnancy will draw out flat or inverted nipples. However, in the last trimester, beginning a few hours a day, a woman can wear them to possibly help with nipple protrusion. Sometimes, a breastfeeding “device” can decrease a woman’s confidence in her ability to breastfeed.

Nipple Shield

A nipple shield is a silicone nipple that rests over the mother’s nipple while breastfeeding. The nipple shield is

designed to temporarily assist with persistent difficulty with attachment to the breast. Risks associated with nipple shield use include:

- Reduced breast and nipple stimulation, decreasing milk production
- Slow infant weight gain or dehydration
- Possible increase in bacterial infection or thrush

Assessment of the baby’s latch should be conducted when using a shield to ensure that the infant is taking in adequate breast tissue and not simply sucking on the shield. Nipple shields are designed as a temporary tool, and education and support regarding weaning from the shield should be shared with a mother desiring to use a nipple shield. When using a nipple shield, work closely with a lactation specialist, as the shield does not take the place of skilled breastfeeding assistance.

Alternative Feeding Methods (Arnold, 2001)		
Feeding Method	Benefits	Risks
SNS	<ul style="list-style-type: none"> • Baby is fed at the breast Nipple stimulation helps to increase milk supply 	<ul style="list-style-type: none"> • Infant must be able and willing to suckle at the breast • Baby must be able to latch onto breast and SNS at same time • Can be time consuming and tedious
Syringe	<ul style="list-style-type: none"> • Easy to Use • Ideal for colostrum 	<ul style="list-style-type: none"> • Difficult to control the flow
Finger Feeding	<ul style="list-style-type: none"> • Allows baby to suck • Can feel how baby is sucking and Can do “suck training” • Finger can be placed at soft palate, similar to nipple • Baby sets own pace and intake of feeding 	<ul style="list-style-type: none"> • Can be tedious or complicated • Possibility of creating an oral aversion • Invasive procedure and out of scope of practice for most lactation consultants, nurses, etc.
Medicine Dropper	<ul style="list-style-type: none"> • Easy to learn • Easy to teach 	<ul style="list-style-type: none"> • May not be appropriate long-term • Does not assist in developing sucking reflex • May be difficult to clean
Cup Feeding	<ul style="list-style-type: none"> • WHO preferred method • Easy to learn, easy to teach • Baby sets own pace and intake of feeding • May train tongue to come out over lower gum ridge • Stimulates suck-swallow response • Baby must be held 	<ul style="list-style-type: none"> • Can be messy • Difficult to measure intake • May not satisfy sucking needs

Normal Newborn Behaviors

“A newborn baby has only three demands. They are warmth in the arms of its mother, food from her breasts, and security in the knowledge of her presence. Breastfeeding satisfies all three.”

*~Grantly Dick-Read, (1890-1959)
English obstetrician*

Learning to recognize and interpret the language and communication of infants is an integral part of infant feeding. When women are able to respond appropriately and with increased sensitivity to their infant's needs, they develop a greater understanding of their role as a mother. Often this helps to build a woman's confidence in her ability to breastfeed.

Organized and Disorganized Behavior

Infant patterns of behavior may be organized or unorganized. Organized behaviors are characteristic of the more mature infant and are integrated, stable, balanced, exploratory, self-regulated and promote attachment. Unorganized behaviors are characteristic of the less mature infant and are defensive and avoiding in nature.

OBJECTIVES

Identify the six infant states of consciousness

Recognize organized and disorganized infant behaviors

Recognize signs of hunger and signs of satiety

Identify normal newborn behaviors and breastfeeding patterns

Organized Behaviors

- Tongue extensions
- Hands on face or over the ears
- Whimper-like sounds
- Hands clasped together
- Foot clasp
- Fingers “interdigitated” one or more fingers of each hand
- Hand to mouth
- Adjusts body into a more flexed position
- Curls, turns or tucks trunk or shoulders
- Pulls up legs and tucks arms
- Makes grasping movements at own face, body, or in midair
- Extends legs or feet to stabilize
- Mouthing movements with lips or jaws
- Searches while sucking
- Makes an oooh shape with lips
- Maintains a gaze for an observable period of time
- Coos

Disorganized Behaviors

- Active eye averting
- Yawning
- Coughing or sneezing
- Startles followed by jitteriness and possibly crying
- Leg extensions into midair
- Grimace or lip retraction
- Open hands with fingers extended and separated
- Hiccups
- Appears to choke, gag or gulp
- Spits up
- Strains or grunts during bowel movements
- Sighs
- Arches back or pulls away from physical contact
- Infant “airplanes”
- Arms are fully extended into midair
- Frowning

Infant States

Infants display different states of consciousness depending upon the degree of wakefulness or sleep. Each state is accompanied by specific and identifiable behaviors such as body movements, eye and facial movements and breathing patterns.

Deep sleep: Difficult to wake the infant; a lack of eye movements; rare body movements; fine mouth movements; and regular breathing.

Light or disturbed sleep: The infant may make body movements and startle at noises. The eyes are either closed, but will flutter, or the eyes may move under lids. Breathing is irregular, and the infant may make faces such as grimaces, smiles, frowns or sucking movements. The baby may still be difficult to wake to breastfeed.

Drowsy: The baby's eyes start to close; the baby may doze, wake fully, or fall asleep. The infant may stretch when waking. The infant may begin to breastfeed, but then drift off to sleep again.

Quiet Alert: The baby's eyes open wide, the face is bright, body is quiet, and the infant focuses on visual and auditory senses. Breastfeeding is most successful during this state.

Active alert: The infant's face and body move actively, there are frequent movements, and the eyes look around. Breastfeeding is possible, but may be more difficult because the infant may be distracted by hunger.

Crying: The infant moves in disorganized ways, cries, or even screams. To breastfeed in this state is often difficult because the infant may need to be calmed prior to breastfeeding.

Hunger Cues

All infants show feeding cues, which mothers can learn to interpret and respond to. Feeding cues may even be observed while the infant is in light sleep. Some babies are very calm and wait to be fed or go back to sleep, if not noticed. This can result in underfeeding. Other babies wake quickly and become very annoyed if not fed immediately. Learning to recognize the infant's temperament and responding appropriately builds confidence in a woman's ability to mother and breastfeed successfully.

Signs that an infant may be ready to feed

- Rooting
- Licking
- Hand to mouth movements
- Mouthing
- Rapid eye movements
- Flexion of arms
- Bicycling of legs
- Tense posture
- Crying is a LATE sign of hunger and indicates that other cues have been missed

Signs that an infant may be full

- Cessation of audible swallowing
- Increased non-nutritive sucking or longer pauses between sucking
- The infant self-releases from the breast
- Disappearance of hunger cues
- Arms and legs relaxed
- Drowsy
- Sleeping

Normal Breastfeeding Patterns

In order to ensure a healthy milk supply and adequate growth, infants may breastfeed up to 16 times in 24 hours during the early weeks. Babies may vary their feeding patterns or may demand to breastfeed on a consistent schedule. Babies may cluster feed, having several feedings close together often followed by a longer stretch of sleep. Babies will also go through growth spurts when they may breastfeed more often or be fussier. Breastfeeding frequency may also increase as infants are working on developmental advances such as sitting up, crawling, or walking. Having a realistic expectation of breastfeeding behaviors at different stages of development can help increase breastfeeding duration.

Birth to One Month

Newborns may crawl, self-attach, and breastfeed successfully within a short time following birth. The baby is awake and alert for only short periods of time; the longest quiet alert period is during the first hour after birth. The newborn prefers the mother and smell of her breast milk and has the capability of molding their body to the mother's. Newborns can see roughly six to twelve inches, with their side vision being clearest.

Two to Five Months

During the second month of life infants may be easily pacified by frequent breastfeeding. As infants grow in their awareness of the world around them, they may occasionally pull off the breast to look around, refuse to nurse, or nurse often for shorter periods of time.

Six to Eight Months

By six months of age infants may be eating complementary foods or showing signs of readiness. The infant may breastfeed longer before going to sleep at night or may still wake during the night. By seven or eight months, the infant may engage in social interactions while breastfeeding, be willing to breastfeed anytime and anywhere, and may actively attempt to get to the breast.

Nine to Twelve Months and Beyond

Around nine to ten months of age infants become easily distracted by their surroundings and may interrupt feedings frequently. The infant may create a word or gesture that indicates his desire to breastfeed and may initiate social games such as peek-a-boo while at the breast. As the infant reaches increased motor activity and skill levels, they may awaken more often at night and have an increased desire to breastfeed. By eleven or twelve months infants may try various acrobatic positions, may use their top hand to play or pat mom's chest, and hum or vocalize while feeding. Breast milk intake will continue to decrease as solid foods are increased.

Breastfeeding Frequency per 24 Hours

- Newborn: 8-12 feedings
- 1 Month: 7-10 feedings
- 2-5 Months: 6-9 feedings
- 6-8 Months: 6-8 feedings
- 9-12 Months: 4-8 feedings

Growth Spurts

Growth spurts occur when the infant is growing rapidly. The infant may need more comforting than usual, thru breastfeeding. Infants do NOT need supplementation during a growth spurt. Responding to the infant's hunger cues by breastfeeding frequently helps to build up the mother's milk supply. The mother's milk supply will increase in about two to three days. Growth spurts are temporary and babies typically return to a normal feeding pattern in five to seven days.

Growth spurts

- 7-10 days
- 2-3 weeks
- 4-6 weeks
- 3, 6 and 9 months

Spitting Up

Nearly half of all newborns will spit up at least once a day during the first few months. Breastfed babies tend to spit up less frequently than formula-fed babies, yet many healthy babies will spit up regularly after breastfeeding. Most babies will outgrow spitting up. If the baby is healthy, gaining weight and content, spitting up is not a medical concern.

Night Waking

Waking during the night is normal for babies. Most babies will not sleep through the night until they reach at least twelve weeks of age and often it is much later. Supplements or starting solid foods does not help the baby to sleep longer at night and can interfere with breastfeeding and milk supply. Keeping the mother and baby in close proximity can help to facilitate breastfeeding and minimize night waking and sleep loss. Encourage mothers to practice safe sleeping habits and responsive parenting skills.

Fussiness/Crying

Babies may cry when they are hungry, overtired, overstimulated, lonely, or uncomfortable. Many infants tend to have a regular fussy period which often occurs in the early evening. Babies who are carried tend to cry less often. If the baby calms with more frequent breastfeeding, encourage the mother to do so. If breastfeeding does not help to calm the infant, encourage the mother to try other comfort measures such as:

- Burp the baby
- Change the diaper or check the clothing
- Take a warm bath together
- Rock, carry or swaddle the baby
- Massage the baby

“In all families we need to encourage the touch of breastfeeding, that is the way the parent and infant communicate and become attached.”

*~ S. Heller
Author of The Vital Touch*

Breastfeeding Management Supporting Resources

These resources can be ordered from S.C. DHEC to supplement breastfeeding management education. The resource numbers and titles, for ordering purposes, are below.



ML-025296 "Breastfeed for the Best Start" Brochure



ML-025505 "Do Not Disturb/Encourage Us" Door Hanger



ML-025438 "5 Steps to a Good Latch" Dual Language Brochure



ML-009107 "Breastmilk Expression & Storage" Brochure

MODULE III

Special Situations

Breast and Nipple Problems

“The child, offered the mother’s breast, will not in the beginning grab it; but soon it clings to it with zest. And thus at wisdom’s copious breasts you’ll drink each day with greater zest.”

~Johann Wolfgang von Goethe (1749-1832)
German poet

Breastfeeding should not be painful. Breast or nipple pain that is persistent, remains throughout the feeding, continues between feedings, is of intense pain, or nipples with cracks or sores is not normal and an in-person evaluation is necessary. If these difficulties are not managed properly, breastfeeding may lead to unnecessary pain and discomfort or premature weaning. Educating women regarding the prevention of breastfeeding difficulties, offering appropriate management techniques when difficulties do occur, and connecting women to additional resources for information can help to increase breastfeeding duration and satisfaction.

Breast and Nipple Examination

If a mother or infant is experiencing pain or difficulty when breastfeeding, observe the condition of the mother’s breasts and nipples when observing a breastfeed. Often what is needed can be observed when the mother latches the baby onto the breast and as the baby releases the breast to finish the feeding. Touching a woman’s breasts when conducting a breast or nipple examination is not necessary. If a physical examination is necessary, always ask permission before touching a woman’s breasts and explain what you need to do. Be sure to respect the mother’s concerns for privacy and modesty. Talk to the mother about what is found and build her confidence in her ability to breastfeed by highlighting anything positive.

Flat or Inverted Nipples

Women with flat or inverted nipples can successfully breastfeed. Nipple exercises or the use of breast shells have not been shown to effectively correct flat or inverted nipples and can decrease a woman’s confidence in her ability to breastfeed. A severely inverted nipple may have fewer milk ducts and follow-up is recommended to ensure adequate weight gain. Gentle massage of the nipple or pumping with a breast pump

OBJECTIVES

List ways of assisting mothers with flat or inverted nipples

Identify the symptoms, causes, and management options for common breast and nipple problems

- Sore nipples
- Engorgement
- Plugged ducts
- Mastitis
- Breast abscess
- Thrush

prior to nursing has been found to evert the nipple and help facilitate latch-on.

Sore Nipples

Some mothers may experience an initial tenderness during the first few days. This is normal, but should disappear as mother and baby become more efficient at breastfeeding. The most common cause of sore nipples is due to the infant incorrectly positioned and attached to the breast. If the nipple soreness causes a mother anxiety when putting the baby to the breast or visible damage to the nipples is noted, an evaluation is needed.

Causes

When assessing a breastfeed, observe the mother’s breasts and nipples before and after a feeding. Pinched or blanched nipples and the location of sores on the breast or nipple tissue may indicate improper attachment at the breast. Ask the mother to describe what she feels as the baby latches onto the breast and breastfeeds.

Management

Individual assessment is necessary to determine the appropriate treatment plan for sore nipples. Management and treatment plans for sore nipples should be reflective of the assumed cause of discomfort, facilitate healing, and prevent further discomfort.

Treatment that should NOT be used for sore nipples:

Do NOT stop breastfeeding to rest the nipple. This may lead to engorgement, making it more difficult for the baby to latch onto the breast and possibly decreasing milk supply.

Do NOT limit frequency or time at the breast. Limited feedings will not correct sore nipples if the underlying cause is not addressed.

Do NOT apply any ointments that can be harmful to the baby to ingest, must be removed prior to breastfeeding, or can irritate the nipples and increase the discomfort.

Do NOT use a nipple shield as a routine measure to correct poor positioning and latch.

Engorgement

Fullness of the breasts is both common and normal in the first few weeks of breastfeeding. This fullness results from the increased blood flow to the breasts and increased milk production. The breasts may feel warm, full, or heavy. The most effective relief for breast fullness is to breastfeed the baby frequently. Cool compresses may be used between feedings, if needed. By the second or third week postpartum, a mother's milk production will adjust to the needs of the infant, causing the breast fullness to decrease and the breasts to feel softer.

If milk is not removed from the breast, swelling and engorgement result. This causes the breasts to become hot, hard, and painful. The breast and nipple tissue may also look tight, red, or shiny. If a woman becomes engorged, attaching to the breast may be difficult for the infant because the nipple and areola are very taut and hard to grasp. If milk is not removed from the breast, milk production will decrease.

Possible Causes of Sore Nipples

- Poor positioning or incorrect attachment to the breast
- Irritants to the breast or nipple tissue from ointments or creams applied to the breast
- Thrush
- Improper use of nipple shield
- Improper use of breast pump or breast shells that do not fit properly
- Teething
- Baby falling asleep at the breast and clamping down
- Mother menstruating or pregnant
- Pulling nipple out of the infant's mouth without first breaking the suction
- An infant with a short or tight frenulum (tongue-tie)

Treatment for Sore Nipples

- Reassure the mother that sore nipples can heal and be prevented
- Apply expressed breast milk to the nipple to lubricate and soothe the damaged tissue
- Use moist wound healing
- Change breastfeeding position
- Begin each breastfeed on the least sore breast
- Use an asymmetrical latch and correcting attachment at the breast
- Apply therapeutic ointments and butterfly bandages
- Tissue lubrication
- Use pain relief medications, if necessary

Causes

The most common cause of engorgement is infrequent or skipped feedings which result in inadequate emptying of milk from the breasts. Poor attachment at the breast can also cause engorgement, if milk is not effectively removed.

Management

To treat engorgement, milk must be removed from the breast. Effective milk removal will decrease the mother's discomfort, increase milk production, and enable the baby to receive breast milk. If engorgement is not corrected, a woman may develop further complications. Immediate treatment and follow-up should be provided.

When a mother chooses NOT to breastfeed

Not all mothers will choose to breastfeed. When a mother chooses not to breastfeed there are several strategies that can be helpful in relieving engorgement and decreasing her milk supply.

- Be sure the breasts are well supported and the mother is comfortable. Do not bind the breasts tightly as this may increase her pain or discomfort.
- Warm or cool compresses may be used, whichever is more comfortable for the mother.
- Encourage the mother to express some milk when the breasts are uncomfortably full. Do not express enough milk to empty the breasts, stimulating more milk production. Only express enough milk to relieve the discomfort.
- Mild analgesics may be used to relieve the pain. Some women have also found plant products such as raw cabbage leaves, placed directly on the breasts may reduce pain and swelling.

Plugged Ducts

A plugged duct can occur when a milk duct becomes clogged with milk. If the milk is not removed from the breast it can cause inflammation and may lead to a breast infection or mastitis. A woman with a plugged duct may complain of a localized tender area on her breast or a benign lump. The skin over it is red or tight and the plugged duct can be felt in her breast. Repeated cases of plugged ducts may be caused by fatigue or diets high in calcium.

“When an actress takes off her clothes onscreen but a nursing mother is told to leave, what message do we send about the roles of women?”

*~ Anna Quindlen
Pulitzer Prize Winning Journalist*

Treatment for Engorgement

- Continue frequent breastfeeding
- Practice proper positioning and attachment at the breast
- Apply moist heat by placing the breast in a bowl or sink of warm water or take a warm shower and massage breasts before a feeding to facilitate the MER
- Express some milk to soften the areola and breast and allow the nipple to protrude easily to help facilitate latch-on
- Use varied positions to help facilitate milk removal from all areas of the breast
- Massage the breasts, working the milk from the edges of the breast toward the nipple
- Breast compression may also be used during the feedings
- If breastfeeding alone does not relieve engorgement, encourage the mother to express milk between the feedings
- Pain relief medication may be used, if necessary

Causes

- Severe engorgement
- Inadequate removal of milk from one area of the breast
- Infrequent or skipped feedings
- Pressure applied to one area of the breast from a tight bra or clothing, lying on the breast while sleeping, or trauma to the breast

Management

Treatment and follow-up should be provided to a mother with a plugged duct. Mothers with a plugged duct should be encouraged to follow the management techniques for engorgement as well as the following.

Breast Infection (Mastitis)

Mastitis is a breast inflammation caused by an infection. Mastitis often follows engorgement or a plugged duct. When a mother has a breast infection, she may have tenderness or redness of the breast, flu-like symptoms such as body aches and pains, headache, nausea, fever, chills, or fatigue. Mastitis generally occurs in one breast, but may be present in both breasts. Any mother complaining of these symptoms should be referred to a health care professional immediately.

Causes:

- Infrequent feedings or scheduled frequency or duration of feedings
- Missing feedings
- Poor attachment leading to inefficient removal of milk
- Damaged nipple, especially if colonized with *Staphylococcus aureus*
- Illness in mother or baby
- Oversupply of milk
- Rapid weaning
- Pressure on the breast (e.g., tight bra, car seatbelt)
- White spot on nipple or blocked nipple pore or duct: milk blister, granular material, *Candida*
- Maternal stress and fatigue
- Maternal malnutrition or anemia

Treatment for Plugged Ducts

- Continue to breastfeed, feeding frequently on the affected breast
- Rotate the infant's position at the breast so that the tongue stimulates the milk flow from the plugged duct.
- Breastfeed on the affected breast first to take advantage of the infant's vigorous sucking
- Gently massage the blocked duct or tender area toward the nipple during and between feedings
- Check that clothing, particularly a bra, fits comfortably and is not too tight

Management:

Appropriate treatment of mastitis involves a referral to the mother's health care provider. Antibiotics are

often prescribed to help cure the infection. A mother with mastitis should be encouraged to follow the

management options for plugged ducts and engorgement as well as the following treatment for mastitis.

Treatment for Mastitis

- Complete the entire course of any prescribed medication
- Remove the milk frequently by continued breastfeeding. If necessary, encourage the mother to express her milk between feedings and to not skip feedings. If milk is not removed, an abscess may form.
- Breastfeed on the affected breast first, if it is not too painful
- Gently massage the blocked duct or tender area toward the nipple during and between feedings
- Drink plenty of fluids
- Get plenty of rest. If a mother is employed, she should be encouraged to take sick leave.
- Mild analgesic may be used, if necessary

Abscess of the Breast

Engorgement, plugged ducts, and mastitis can all lead to an abscess of the breast. A breast abscess is a localized infection deep within the breast. Women who develop a breast abscess may complain of general ill feeling and painful, localized swelling of the breast, which may have a purple or bruising discoloration. A mother experiencing symptoms of a breast abscess should be referred to a health care provider immediately.

Causes

An abscess of the breast is typically caused by untreated engorgement, plugged duct, or mastitis.

Management

An abscess of the breast is rare and can be prevented with proper breastfeeding management.

Treatment for a Breast Abscess

- Surgical drainage or aspiration by syringe will be necessary.
- A course of antibiotics is generally prescribed. The mother should be encouraged to complete the entire course of the prescribed medication.
- Milk should be removed from the breast frequently. If the drainage tube or incision does not interfere with attachment, the infant may continue to breastfeed on the affected breast. If the location of the abscess interferes with breastfeeding, the mother should express or pump to continue to remove the milk and maintain her milk supply.
- Continue to breastfeed as usual on the unaffected breast.
- Mild analgesic may be used, if needed.

Thrush (Candida Albicans)

Thrush is a yeast infection caused by Candida Albicans. It may affect the surface of the nipple and areola and may penetrate the breast through nipple fissures. Thrush often follows the treatment of antibiotics due to mastitis or other infections. Both mother and baby need to receive simultaneous treatment for thrush in order to prevent passing the infection back and forth to each other at the breast.

Women with thrush may have no symptoms, may suddenly develop extremely sore nipples or they may complain of burning, itching, or flaky nipples. Mothers may also describe shooting pain deep within the breast during or between the feedings. Discoloration of the nipple or areola, sometimes with blisters, may also be present. The infant may have no symptoms or may have white patches in the mouth and cheeks or a white film on the tongue or a diaper rash. The baby may also abruptly change their breastfeeding pattern or refuse to breastfeed.

Predisposing Factors:

- Lowered immune response
- Bacterial and viral infection, anemia, diabetes
- Trauma to nipple
- Damp breast pads and bras
- Previous use of antibiotics
- Poor hygiene (especially hand washing)
- Repeated exposure through intimate contact with infected family members

Management:

Candida albicans is persistent and can re-colonize in one hour. The treatment of thrush should involve a referral to a health care provider with the recommendation that both the mother and infant be treated simultaneously in order to prevent reinfection. Other family members should also be treated in the case of recurrent infections.

Treatment for Thrush

- Antifungal medication, such as Nystatin, will often be prescribed for both mother and baby
- Other antifungal medications, such as gentian violet which is inexpensive and does not require a prescription, are also available
- Wash hands often (especially after changing a diaper and before breastfeeding)
- Launder bras, towels, washcloths, and bibs in hot water and hang in the sun to dry
- Boil or replace pacifiers, bottle nipples, teething toys, etc.
- Do not store breast milk as freezing will not kill the yeast
- Boil breast pump parts that come into contact with breast milk
- Throw away disposable breast pads when they become wet

Contraindications to Breastfeeding and Maternal Medications

“Breastfeeding is not a guarantee of good mothering, and formula feeding does not rule it out.”

~Le Leche League

Medical contraindications to breastfeeding are rare. In some cases, maternal medications may also contraindicate breastfeeding. The risks and benefits of breastfeeding versus the risks of not breastfeeding should be considered and appropriate alternative feeding methods and supplementation options should be discussed when necessary.

Maternal Conditions

HIV and AIDS

HIV and AIDS is a contraindication to breastfeeding in the United States. Infants may acquire HIV from their mothers during pregnancy, birth, or through breastfeeding. This is called mother-to-child transmission (MTCT). Breastfeeding may increase the risk of MTCT of HIV. Although the risk of MTCT through breastfeeding is controversial and believed to be relatively low, prevention of further transmission of the virus is key.

Women who are HIV positive or have AIDS should be counseled NOT to breastfeed.

Women who are at high risk for HIV, such as those with sexual partners known to be HIV-positive or injection drug users, should be counseled regarding the potential risk of MTCT through breastfeeding and provided with education on how to reduce their risk for HIV.

Women who do not know their status of HIV should be counseled regarding the risks of MTCT and benefits of knowing her status. She should also receive education on how to reduce her risk of infection.

HTLV-1 (Human T-cell Leukemia Virus Type 1)

HTLV-1 is a contraindication to breastfeeding. The prevalence of HTLV-1 is low in the United States, but it is increasing in Africa, the West Indies, and Japan. Research has not yet confirmed that the presence of the HTLV-1 virus in breast milk actually causes the disease.

OBJECTIVES

Define the role of peer counselors

Use the 3-Step counseling strategy for breastfeeding counseling

Identify strategies for effective telephone counseling

Determine when to make a referral to a breastfeeding coordinator or lactation consultant

Discuss culturally sensitive counseling strategies

However, the primary mode of transmission appears to be through breast milk. Therefore, women with HTLV-1 should be counseled NOT to breastfeed.

Although breastfeeding may be interrupted or delayed due to treatment, breastfeeding can continue in all other cases of maternal infection.

Tuberculosis (TB)

Active, untreated TB is a contraindication to nursing the baby at the breast. Breastfeeding is not contraindicated in mothers with a previous positive skin test for TB and in mothers with no symptoms of the disease. Mothers with symptoms of TB should avoid direct contact with the infant until diagnosis has been confirmed and treatment begun. TB is not transmitted via breast milk. Therefore, the mother should pump to maintain her milk supply and may feed the baby her expressed breast milk. The mother should be encouraged to complete the entire course of treatment to avoid re-infection and may resume breastfeeding after at least two weeks of antibiotic therapy. Once a mother is allowed to be in contact with her baby, it is safe to breastfeed.

Hepatitis

Hepatitis A: Mothers with Hepatitis A may breastfeed. If the mother develops Hepatitis A within two weeks of delivery, the infant should receive a gamma globulin and then breastfeeding can continue.

Hepatitis B: An infant born to a mother infected with Hepatitis B should receive Hepatitis B specific immunoglobulin (HBIG) within 12 hours of birth and vaccination for Hepatitis B according to the recommended schedule. There is no need to delay breastfeeding until the infant is fully immunized.

Hepatitis C: A minimal risk exists that Hepatitis C can be transmitted through breastfeeding. However, if the disease is in an inactive phase and the mother has no symptoms, the risk of the infant getting the disease is even less. More research is needed, but until then, breastfeeding should not be discouraged unless there is a co-infection with HIV.

Herpes Simplex

The herpes virus is spread through contact with the sores and has been fatal to newborns. Breastfeeding may continue as long as the baby does not come into contact with the sores. Extreme caution should be used to avoid contact with the sores.

Breastfeeding with Herpes Simplex

- If sores are present on the breast, they should be covered to avoid contact with the infant.
- If sores are present on the nipple or areola, breastfeeding should be discontinued on the affected breast until the sores have healed.
- The mother may pump or express her milk. If the mother's hand or pump comes into contact with a sore while expressing, she should discard the milk. If she does not touch the sore with her hands or pump, the milk may be given to the baby.

Varicella Herpes Simplex (chickenpox)

Chickenpox can be fatal to an unborn baby or newborn, if the baby contracted the disease in utero. If a woman contracts chickenpox within five days before giving birth and her baby is not born with the disease, the health care provider may recommend a separation of mother and baby. If a separation is necessary, the mother should express her milk and have it given to the baby by an appropriate alternative method. Once the mother is no longer contagious, the mother and baby may be reunited and breastfeeding may be initiated.

Sexually Transmitted Diseases

Breastfeeding may continue uninterrupted in cases of Chlamydia, Gonorrhea, and Trichomonas. In cases of Syphilis, precautions should be taken similar to Herpes Simplex should be taken.

Mild Colds and Flu

When a mother is exposed to bacteria or illness her body begins developing specific antibodies, which help protect her breastfeeding infant. Continuing to breastfeed provides the infant with protection against the disease. If breastfed infants do become ill often, the illness is less severe and for a shorter duration.

Infant Conditions

Galactosemia

Breastfeeding is contraindicated in an infant with galactosemia. Galactosemia is a rare inherited metabolic disorder in which the infant's liver is unable to break down galactose, resulting in an inability to metabolize lactose, or milk sugar. Excessive accumulation of galactose may lead to malnutrition, liver problems, mental retardation and other abnormalities. Galactosemia is the only infant condition in which breastfeeding must be stopped completely. Newborn screening in South Carolina routinely tests for galactosemia. Blood tests for galactosemia may produce false-positive results. Infants may be retested to confirm the results. No breast milk should be given to the infant as long as the test is positive.

Phenylketonuria (PKU)

Infants with Phenylketonuria (PKU) can be totally or partially breastfed. PKU is a rare metabolic disorder in which the infant lacks the enzyme necessary to break down and use the amino acid, phenylalanine. If not detected and treated, the accumulated phenylalanine can lead to mental retardation. Newborn screening in South Carolina, as in other states, routinely tests for PKU. If a baby tests positive for PKU, a second test should be conducted to confirm the results. Treatment of PKU generally includes a diet low or free of phenylalanine. Because breast milk has low levels of phenylalanine, an infant diagnosed with PKU can be breastfed. A small amount of a casein-free hydrolysate formula may be used to supplement if necessary. Phenylalanine levels should be monitored closely and the use of the supplement adjusted accordingly.

Maternal Medications

Very few maternal medications are contraindicated during breastfeeding. Most medications penetrate the mother's milk to some degree. With a few exceptions, most prescribed medications have very low concentrations in breast milk and the dose received by the infant is minimal. Often alternative drugs more compatible with breastfeeding may be used.

Chemotherapy and Radioactive Treatments

Breastfeeding is contraindicated while undergoing chemotherapy or radioactive treatment. Mothers requiring chemotherapy or the use of radioactive compounds may require a temporary cessation of breastfeeding. Prior to treatment, mothers should be encouraged to express and store enough milk to feed the infant during the treatment. During the radioactive treatment mothers should be encouraged to pump and discard their milk for the required time that the drug is present in the milk.

Safe Use of Medications While Breastfeeding

- Avoid using medications, if possible
- Advise the mother to consult with both her physician and the baby's physician
- Ask if the medication is necessary or if there is a safer drug available
- Weigh the risk of infant exposure against the benefits of breastfeeding
- Consider the chronological age and maturity of the infant
- Administer the medication immediately following a breastfeed to minimize exposure
- Observe the infant for unusual signs such as fussiness, rashes or a change in sleeping or feeding patterns

Only a licensed health care professional can prescribe and evaluate the safety of drugs while breastfeeding. Breastfeeding counselors can assist and empower breastfeeding women to work openly with their health care providers, encouraging mothers to explore their options, and providing information and resources.

“Most pharmaceutical manufacturers often discourage breastfeeding due to fear of litigation, not because the drug enters the milk in clinically relevant amounts.”

*~ Thomas W. Hale
Clinical Pharmacologist and Author*

Resources on medications and breastfeeding

- Drugs and Lactation Database (LactMed): A peer-reviewed and fully referenced database of drugs to which breastfeeding mothers may be exposed. Among the data included are maternal and infant levels of drugs, possible effects on breastfed infants and on lactation, and alternate drugs to consider. <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT>
- Dr. Thomas Hale is a clinical pharmacologist and leading expert in the use of medications and breastfeeding. Dr. Hale's Breastfeeding Pharmacology webpage includes a forum for health care professionals. <http://neonatal.ttuhs.edu/lact/>
- Hale, T. (2008). Medications and Mothers' Milk (13th ed.). Amarillo: Pharmasoft Publishers
- Breastfeeding and Human Lactation Study Center: The Study Center is a program based at the University of Rochester School of Medicine and Dentistry, Rochester, New York. The drug data bank is updated monthly and may be contacted at 585-275-0088.
- Drugs During Pregnancy and Lactation: A Reference Guide to Fetal and Neonatal Risk by Gerald G. Briggs, Roger K. Freeman & Summer J. Yaffe.
- Committee on Drugs (1 Sep 2001) The Transfer of Drugs and Other Chemicals Into Human Milk Pediatrics 108 (3): 776-789.

Illegal Drugs

Drugs of abuse, or street drugs, are contraindicated during breastfeeding. Illegal drugs can pass into the mother's milk and are not only hazardous to the infant, but extremely harmful to the physical and emotional health of the mother.

Amphetamines: can cause irritability and sleepiness in the infant.

Cocaine: passes into the breast milk in significant amounts and can cause cocaine intoxication in the infant.

Heroin: passes into the breast milk in significant amounts and can cause tremors, restlessness, vomiting, poor feeding, and heroin addiction.

Marijuana: the active ingredient, THC, has been found in infant's urine and stools up to two weeks following exposure.

Use of illegal drugs should be reported and the mother referred to her health care provider and substance abuse counselor.

Alcohol

Alcohol consumption is a contraindication to breastfeeding. Breastfeeding women should be discouraged from drinking excessive amounts of

alcoholic beverages. Alcohol does not have any beneficial effects on lactation and should not be recommended. Alcohol passes freely to the breast milk. Excessive amounts of alcohol affects the central nervous system of both mother and baby and may impact the MER or decrease milk intake by the infant. If a woman chooses to have an occasional drink she should avoid breastfeeding for at least two to three hours. If alcohol abuse is suspected, the mother should be referred to her health care provider or substance abuse counselor.

Nicotine

Smoking and the use of tobacco is never recommended. Smoking may impact a mother's milk supply and women who smoke tend to wean earlier. However, smoking is not a contraindication to breastfeeding. Smoking and breastfeeding seem to be less detrimental to the infant than smoking and formula feeding. Breastfed infants whose mother's smoke have a reduced risk of respiratory infections and SIDS.

Support for Women who Smoke

- Support for continued breastfeeding
- Encouragement to smoke outside or away from the infant
- Support and education for smoking reduction or cessation

Caffeine

Moderate consumption of caffeine containing products, such as coffee, tea, chocolate, and some carbonated beverages does not cause problems for most breastfeeding mothers and infants. Very little caffeine passes into the breast milk and in most cases it takes more than five cups of coffee per day to produce symptoms in the infant. Excessive amounts of caffeine may cause an infant to be more irritable, fussy, and wakeful. Caffeine containing medications such as stimulants, pain relievers, cold remedies, and weight control aids should also be avoided or used in moderation and in consultation with a health care provider.

Herbal Remedies

Many medications originate from herbs. While most herbs pose no harm to the mother or baby, some herbal therapies have the potential for side effects and can be dangerous. Some herbs may increase or decrease a mother's milk supply. Research is limited on the use of herbs during breastfeeding. Caution should be used and excessive consumption avoided. Encourage a breastfeeding mother to check with her health care provider regarding the safety of herbs and possible interaction with other medications prior to use.

Breastfeeding and Birth Control

Unintended births lead to increased emotional and financial costs, poor nutritional status, and increased maternal and infant death and disease. One of the concerns of many breastfeeding women are appropriate methods of birth control that are compatible with breastfeeding.

The Lactational Amenorrhea Method (LAM) is a method of family planning based on the contraceptive effects of breastfeeding. Medical experts have reviewed the scientific data regarding the use of lactational amenorrhea and determined that LAM is 98% effective as long as the three criteria are met.

LAM requires careful counseling and support. Women who no longer meet the three criteria or who no longer wish to use LAM should be advised to continue breastfeeding and immediately initiate another method of family planning, if they wish to avoid pregnancy.

LAM Criteria

- Full or nearly fully breastfeeding
- Mother's period has not yet returned
- Infant is less than six months old

Many other methods of birth control exist, which can be used safely and effectively by breastfeeding women. Women should discuss appropriate methods of birth control while breastfeeding with their health care provider.

- Non-hormonal or barrier methods such as condoms, diaphragm, spermicides and natural family planning are compatible with breastfeeding. Barrier methods can be used at any time during lactation.
- Hormonal, progestin-only methods such as Norplant, depo provera injections, and the mini-pill are compatible with breastfeeding. Oral contraceptives used during the first six weeks postpartum may decrease a woman's milk supply.
- Birth control methods containing estrogen are usually not recommended for breastfeeding women as estrogen containing contraceptives have been shown to decrease a woman's milk supply.
- If hormonal methods are chosen, use of these methods should be postponed until breastfeeding is well established or until about six weeks postpartum.

Summary of Contraindications to Breastfeeding

Maternal Conditions	Maternal Medications	Infant Conditions
HIV/AIDS HTLV-1	Chemotherapy and radioactive compounds Illegal Drugs	Galactosemia

Special Infant Situations

“Human milk is the preferred feeding for all infants, including premature and sick newborns. It is recommended that breastfeeding continue for at least the first 12 months, and thereafter for as long as mutually desired.”

~American Academy of Pediatrics

Infants begin developing the mechanisms necessary for feeding early during pregnancy. By week eight of a woman’s pregnancy, the fetus can respond to touch in the mouth area. Swallowing has been observed by week eleven. By weeks twelve to fifteen the fetus is able to differentiate tastes and by week eighteen the fetus can begin sucking. The gag reflex has been noted between weeks twenty-six and twenty-seven and rooting observed by week thirty-two. At about thirty-five to thirty-seven weeks of gestation, the infant has a coordinated suck-swallow-breathe rhythm (Lang 2002).

Premature Infants

Breast milk is ideally suited for the needs of the premature infant. Preterm breast milk is uniquely designed for the premature infant with more protein, higher levels of nitrogen, fatty-acids, sodium, chloride, iron and more immune properties than mature milk. Preterm breast milk can be expressed and fed to the preterm infant with a cup, spoon, or feeding tube even before the baby is able to breastfeed. Preterm infants who receive breast milk may have higher IQs and improved cognitive development than those who receive formula. If the preterm infant is unable to effectively feed at the breast, consider these: establishing an adequate milk supply, use of alternative feeding methods, and transitioning the baby to the breast.

Establishing a Milk Supply

- Mothers should begin pumping as soon as possible following delivery, preferably within 6-12 hours
- Hospital grade electric pumps are the best option for mothers establishing a milk supply and pumping for most or all of the feedings
- Double collection kits should be used when available as pumping both breasts simultaneously is more time efficient and may help to increase a mother’s milk supply

OBJECTIVES

Identify problems associated with the following and strategies to help facilitate breastfeeding:

- Premature infants
- Multiples
- Slow weight gain
- Jaundice
- Neurologically impaired
- Cleft Lip/Palate
- Breast refusal and nursing strikes

Describe strategies for helping mothers cope with grief

- When pumping, mothers should mimic the feeding patterns of a healthy newborn and pump a minimum of eight times a day for a combined time of 120 minutes per twenty-four hours
- Mothers should be encouraged to practice skin-to-skin contact, or kangaroo care, as this not only helps stimulate the infant and facilitate positive interactions, but it can also assist the mother in maintaining her milk supply. Kangaroo care may also trigger the production of antibodies in the mother’s milk to specific pathogens in the infant’s environment

Alternate Feeding Methods

- Gavage, or tube feeding, may be used when an infant does not yet have a coordinated suckswallow-breathe rhythm. Tube feeding may also be used for supplementing an infant at the breast.
- Cup feeding offers a baby-led alternative for a baby who is unable to breastfeed. At 30-34 weeks, babies are able to lap the milk with their tongues.
- Breastfeeding may be initiated when the infant is stable and able to gag.

- For a preterm infant to first learn how to suck on a bottle nipple prior to breastfeeding is not necessary. Research has shown that breastfeeding is less stressful than bottle-feeding. Premature infants have improved body temperatures, oxygen saturation and heart and respiratory rates when breastfeeding versus bottle-feeding.

Transition to the Breast

- To nurse effectively, the baby needs to hold the jaw steady and press the nipple and areola between the gums. Due to weak muscle tones this is often difficult for premature infants.
- Prior to transitioning to the breast, sessions of skin-to-skin, non-nutritive suckling, or suckling on an empty breast should occur. Often the infant will initiate breastfeeding during these skin-to-skin sessions.
- Use of the dancer hand position in which the thumb and forefinger form a “U” and gently cradle the baby’s chin can provide added chin support.
- Transitioning fully to the breast may take some time for the infant. Encouraging mothers to have realistic expectations and to have patience and persistence may help facilitate the process.
- If the baby is not able to nurse effectively, but has a coordinated suck-swallow-breathe, a supplemental nursing system may be used at the breast.

Twins and Higher Order Multiples

Mothers are able to produce adequate milk for multiple babies. Whether the babies were term, near term or premature will affect the needs of the mother and babies. Twins can breastfeed simultaneously or individually. Encourage the mother to experiment with different feeding positions. Feeding twins simultaneously helps to develop synchrony of feeding schedule and increases prolactin levels. Feeding each twin separately takes more time, but is more individualized. For higher order multiples such as triplets, individualized feeding plans need to be developed. In order to ensure adequate weight gain, the mother may need to keep a chart or record of the feedings.

Slow Weight Gain

The term “slow-gaining infant” has been used to characterize infants whose weight:

- Shows slow but steady growth and when charted on a standardized growth chart, remain between the same two percentiles over time.
- Shows decline in growth and, when charted on a standardized growth chart, begin to drop slightly in percentiles less than the 50%.

If the infant continues to show steady growth, and does not drop percentiles on a standardized growth chart, family history needs to be considered. If one or both of the parents are small either in weight or stature, this may be a reason that the infant is growing slowly. This baby should appear healthy and happy, and reach development milestones within normal time periods. However, if an infant begins to suddenly show a slowing in weight gain, length or head circumference, then special considerations should be taken. Appropriate interventions for a slow weight-gaining infant should include an in-person breastfeeding assessment and referral to the infant’s health care provider. The most common cause of slow weight gain in the infant is mismanagement of breastfeeding such as brief or infrequent feedings and poor attachment at the breast. Treatment for slow weight gain due to mismanagement of breastfeeding should include measures to increase the mother’s milk supply, improves the infant’s attachment at the breast and improves transfer or intake of breast milk at the breast.

When slow weight gain is a problem, check for the following

- *Number of feedings:* An insufficient number of feedings will lead to slow weight gain. Some babies do not cry when they are hungry and will end up going long periods between feeding.
- *Feeding Duration:* Limiting the length of feedings can cause inadequate milk intake and a decrease in milk supply.
- *Attachment and Positioning:* Poor latch and positioning can cause inadequate milk removal and intake leading to a decrease in milk supply.

Less common conditions that may be present in the infant

- *Neurological Dysfunction:* A suck that is disorganized, weak or a pattern of dysfunction may be a sign of a mild to severe neurological problem.
- *Tongue-tie (Ankyloglossia):* Tongue-tie is a rare circumstance, which may cause an infant to suckle inefficiently at the breast.

Less common conditions that may be present in the mother

- *Hypothyroidism:* Thyroid deficiency may cause poor milk production.
- *Drug use:* Medications such as estrogen, antihistamines, and sedatives may cause low milk production.
- *Insufficient glandular tissue:* This is a rare phenomenon, but can cause insufficient milk production.
- *Poor MER:* (Milk Ejection Reflex) Factors reported to interfere with the MER include maternal hormonal problems, fatigue, excessive amounts of caffeine, smoking, and the effects of certain drugs.

Treatment for slow weight gain may consist of formula supplements and the use of alternative feeding methods. The infant's weight gain should be monitored frequently and continued support for breastfeeding should be offered.

Jaundice

Jaundice is caused by the accumulation of bilirubin in the blood, particularly the skin, where it is visible as a yellowing of the skin and whites of the eyes. Jaundice becomes clinically significant when it develops within the first 24 hours of life, when the levels become exaggerated, or when it is prolonged.

Physiologic Jaundice

Physiologic jaundice, or early-onset jaundice, is a normal physiologic response of the infant to adjusting to life outside the womb. Physiologic jaundice occurs

when the extra blood cells needed by the fetus break down. The newborn liver may not break down the molecule fast enough, causing the bilirubin levels to rise. For most breastfed babies, physiologic jaundice will peak on the third, fourth or fifth day, and then gradually decline. Increasing breastfeeding in the early days often facilitates earlier passage of meconium, helping to reducing bilirubin levels. Exposure to sunlight and more frequent feedings will help reduce the bilirubin levels more quickly. Discontinuing breastfeeding will not help treat this type of jaundice and will unnecessarily disrupt the establishment of milk production in the early days.

Breast Milk Jaundice

Breast milk jaundice, or late-onset jaundice, usually becomes apparent between the fourth and seventh days of life. Bilirubin levels may peak anytime from the seventh to tenth days of life. In breast milk jaundice, the infant is thriving, healthy, and gaining weight. Temporary cessation of breastfeeding is sometimes suggested as a treatment. Usually a 24-hour cessation of breastfeeding is recommended, during which the infant receives formula and the mother is encouraged to pump to maintain her milk supply. Gradual improvement is usually noted following this cessation. There may be a rebound in elevated levels, followed by a gradual decrease in bilirubin levels. If necessary, a second 24-hour cessation may be conducted. Breast milk jaundice often manifests itself in siblings of the same mother.

Pathologic Jaundice

Pathologic jaundice usually appears within 24-hours of birth and bilirubin levels rise very quickly. Pathologic jaundice is often due to blood group incompatibility, deficiency of carrier protein or binding sites or liver and metabolic diseases. Treatment of pathologic jaundice requires determining the origin and underlying cause of the jaundice. Surgery, phototherapy, or transfusion may be required. The mother should be encouraged to continue breastfeeding frequently or pumping if the baby is unable to breastfeed during treatment.

Types of Jaundice		
	Characteristics	Management
Physiologic Jaundice	<ul style="list-style-type: none"> • Manifests itself after first 24 hours • Peaks on the 3rd or 4th day of life • Declines steadily through the first month to normal levels • Condition is often related to insufficient intake of human milk • Often associated with low apgars, water supplementation, and prematurity 	<ul style="list-style-type: none"> • Increase breastfeeding frequency and improve attachment at the breast • Feeding, particularly colostrum, ensures earlier passage of meconium and decreased bilirubin levels • Intervention is generally not needed
Breast Milk Jaundice	<ul style="list-style-type: none"> • Infant is thriving, healthy, and gaining weight • Occurs after the first week and may persist for over a month • Bilirubin levels remain elevated for over a month • Bilirubin levels drop rapidly if other milk is provided along with, or as a temporary substituted for, the mother's milk • Often manifests itself in siblings of the given mother 	<ul style="list-style-type: none"> • 24 hour cessation of breastfeeding (during which time the infant is fed formula while mother pumps to maintain her supply) followed by a return to breastfeeding • Rebound is often seen when infant goes back to breast milk, but bilirubin levels fall gradually
Pathologic Jaundice	<ul style="list-style-type: none"> • Occurs within 24 hrs after birth • Levels rise very quickly 	<ul style="list-style-type: none"> • Determine underlying cause of the jaundice • Surgery, phototherapy, or transfusion may be required • Encourage the mother to continue breastfeeding frequently or pumping if the baby is taken off the breast during treatment.

Neurologically Impaired Infants

Neurologically impaired infants can feed at the breast with proper physical support and encouragement. These infants often have physical conditions, which affect their ability to breastfeed such as low muscle tone, weak suck, tiring easily or uncoordinated suck-swallow-breathe rhythm. Breastfeeding a neurologically impaired infant takes patience and support and may involve a team of health care professionals such as neonatologists, nurses, occupational and speech

therapists and lactation consultants. Interventions to help facilitate feeding at the breast should be designed to fit the needs of the infant and may include:

- Alternative feeding methods, appropriate to the infant's abilities
- Pumping in order to establish and maintain an adequate milk supply
- Skin-to-skin contact which is very beneficial to infants with a weak suck

- Non-nutritive sucking on an empty breast and expressed milk placed on the tongue to provides sensory stimulation
- Careful positioning and support at the breast such as using the dancer hand position to help compensate for low muscle tone

Cleft Lip and Palate

Babies with cleft defects can breastfeed. Cleft lip and/or palate is a congenital defect in which there is incomplete fusing of the central processes around the upper jaw or lip. Cleft lip and/or palate may only affect the lip or may extend into the hard and soft palate. The cleft may be unilateral or bilateral. Breastfeeding is particularly beneficial to infants with a cleft lip or palate as it helps to reduce the risk of ear infections and improves speech development. These facial defects can be corrected with surgery, but the infant's appearance before surgery may affect the amount of cuddling and face-to-face contact that the babies receive. While breastfeeding the infant, the facial defect is not as easily noticed, this may encourage an increase in mother/infant contact.

Cleft defects can make it difficult for a infant to form a seal that is needed to breastfeed. To help babies with a cleft lip and/or palate facilitate breastfeed effectively:

- Experiment with various positions in order to fill the defect with breast tissue and form a seal.
- Support the breast with fingers, using the dancer hand position, if necessary, and use the thumb to cover the defect to help form a better seal.
- Babies with cleft defects may take a longer time to feed. Use pillows to help keep the baby in position and keep the mother comfortable.
- With a unilateral cleft palate, position the nipple away from the cleft and toward the intact side of the mouth.
- Use of a palatal obturator, a device made the same shape as the infant's palate, may be used to keep the cleft from closing and altering his/her proper facial shape. The baby will get used to this device and resume nursing without difficulty.

- Infants with cleft lip and/or palate will require corrective surgery. After surgery, breastfeeding is possible and recommended, as it will help prevent infection and also comfort the infant.

Babies that Refuse to Breastfeed

An infant may refuse to breastfeed for many reasons. Poor feeding or breast refusal may indicate a problem in the baby or mother and a breastfeeding assessment should be conducted.

Reasons why a baby may refuse the breast

- *Jaundice:* Infants with elevated bilirubin levels may be less alert and sleepy, may not attach well at the breast or not maintain active suckling.
- *Hypoglycemia:* Infants with hypoglycemia may be jittery, sleepy, have poor attachment at the breast, and disorganized behavior.
- *Sepsis:* Septic infants are often irritable, then lethargic, resulting in poor feeding at the breast.
- *Chemical Dependency:* Infants born to chemically dependent mothers will often go through symptoms of withdrawal and be jittery, unorganized, and cry inconsolably.
- *Birth Trauma:* Vigorous suctioning at birth or use of forceps may result in poor suckling and difficulty positioning at the breast.
- *Maternal-Infant Separation:* Separation following birth has a negative effect on the infant's ability to self-attach at the breast. Early separation may also have a negative effect on breastfeeding two to three months after birth.
- *Labor Medications:* Medications given to a mother during labor and delivery may cause an infant to be sleepy, have poor attachment at the breast and to have poor sucking rhythm.
- *Goldsmith Sign:* When an infant refuses one breast or suddenly rejects one breast may be an early indication of present or imminent breast cancer. This is a rare occurrence.

Nursing Strikes

A baby that suddenly loses interest in breastfeeding, or refuses to nurse, is most likely going through a nursing strike. Nursing strikes are usually temporary and occur when an infant suddenly refuses to breastfeed after breastfeeding well. A nursing strike may be caused by:

- An ear infection, causing pain or pressure while breastfeeding
- Cold or stuffy nose making it difficult to breathe while breastfeeding
- Teething or other mouth pain
- Pain when being held in certain breastfeeding positions due to injury or immunization
- Easily distracted or interrupted while breastfeeding
- Reduced milk supply
- Unusually long separation from the mother such as overnight
- A change in soap, perfume, or deodorant
- Unusual amount of stress such as when moving, traveling, or dealing with a family crisis
- Recent or sudden change in breastfeeding patterns such as when returning to work
- A strong reaction or startle to pain during an episode of biting, frightening the baby
- Return of menstruation in the mother

If an infant suddenly refuses to breastfeed, attempts should be made to discover the reason for the nursing strike. Sometimes the cause of a nursing strike is obvious. Other times the reason may be more difficult to uncover. Nursing strikes can be physically and emotionally exhausting for both mothers and babies, but breastfeeding can almost always be reestablished with patience and perseverance. Remember that the baby is not rejecting the mother and that breastfeeding is almost always reestablished.

When Babies Refuse the Breast

- Contact their health care provider if an illness or injury seems to be causing the breast refusal
- Increase amount of skin-to-skin contact and cuddling time
- Experiment with different positions
- Attempt breastfeeding in a quiet room with minimal distractions
- Offer the breast when the infant is sleepy or while walking or rocking
- Stimulate the milk ejection reflex prior to offering the breast
- Express or pump to avoid feeling engorged and to maintain milk supply if the baby continues to refuse the breast.
- Feed the baby with alternative methods such as a cup, feeding syringe, or spoon. Do not starve the baby into breastfeeding.

Grief

Many parents have experienced the loss of a baby during pregnancy, during delivery, shortly after birth or during infancy. When contacting mothers during the prenatal and postpartum periods, breastfeeding counselors may be faced with a mother who is dealing with the loss of a baby. Feelings of disappointment, failure, fear, sadness and anger over the death of a baby are normal. Talking about the baby directly and sensitively can help the mother acknowledge the loss and express her feelings. Mothers benefit from telling their story over and over; ask about her baby. Providing information on books, support groups, and community resources can serve to encourage expression of emotions and reduce feelings of isolation.

Mothers experiencing the recent loss of a baby may have specific questions about breastfeeding. If a mother has not begun breastfeeding, her breasts may still fill with milk during the first few days after delivery. Recommend methods of relieving the engorgement, without stimulating further milk production. A mother who has been breastfeeding may need to continue to express her milk in order to gradually reduce her milk production and prevent any complications. Many women find expressing and donating their milk to a milk bank helps facilitate the healing process.

Special Infant Situations

“Countless women have regained trust in their bodies through nursing their children, even if they weren’t sure at first that they could do it. It is an act of female power, and I think of it as feminism in its purest form.”

~Christine Northrup M.D.
Author and visionary

Breastfeeding has life-long benefits for mothers and often empowers women to live healthy lifestyles. The health of the mother has a direct effect on the infant and there are many cases of acute and chronic conditions which may affect the breastfeeding relationship. In most cases, women may need additional guidance and support, but can continue to breastfeed successfully. The following conditions are not an exhaustive list of maternal health concerns and when working with a mother with any of these conditions, additional resources should be consulted.

Cystic Fibrosis

Women with cystic fibrosis CAN breastfeed. Cystic Fibrosis is an inherited disease affecting the respiratory and digestive systems. Until recently, people with cystic fibrosis rarely survived until adulthood. With improved treatment, women with cystic fibrosis are living longer and having children. Research has found that women with cystic fibrosis can breastfeed and produce sufficient milk to feed their infants. Careful nutritional monitoring of the mother should continue in order to ensure adequate caloric intake.

Cancer

Unless treatment options are a contraindicated while breastfeeding, breastfeeding CAN continue in mothers with cancer. Mothers with cancer can breastfeed through biopsies and most diagnostic tests. Breastfeeding is contraindicated during chemotherapy and radioactive treatments.

Multiple Sclerosis (MS)

Women with multiple sclerosis CAN breastfeed. MS is a degenerative disorder of the nervous system, which causes weakness, numbness, and tingling of the limbs, blurring of vision, and slurred speech. Breastfeeding does not cause the symptoms of MS to improve or worsen and fatigue and discomfort may continue to be a challenge. Breastfeeding longer than six months may reduce the infant’s risk of developing MS later in life.

OBJECTIVES

Identify maternal health conditions in need of additional breastfeeding support and strategies to help facilitate the initiation and continuation of breastfeeding

Identify maternal conditions which may cause a decrease in the mother’s milk supply or breastfeeding failure

Carpal Tunnel Syndrome

Carpal tunnel, a syndrome which occurs when the nerves of the hand are compressed by swelling of surrounding tissue due to repeated movements, has been noted in pregnant and breastfeeding women. There have been several cases of carpal tunnel which began within the first month of birth and only resolved following weaning. Breastfeeding is not a contraindication and many women find relief by wearing a splint, keeping the hand elevated, and the use of diuretic drugs.

Physical Limitations

Women with physical limitations CAN breastfeed. Mothers with physical disabilities are often very ingenious and creative at breastfeeding and caring for their infant. Breastfeeding may help to reinforce a mother’s abilities and often, these mothers discover that breastfeeding is more convenient than bottlefeeding. If the mother is taking medication, her health care provider should be consulted to discuss her desire to initiate or continue breastfeeding in order to discuss medications that are compatible with breastfeeding.

Obesity

Overweight and obese women CAN breastfeed. Obesity may affect the likelihood that a woman will choose to breastfeed. Obesity has been associated with premature weaning and early breastfeeding failure, though the reasons for this are unknown. Breastfeeding decreases the risk of obesity later in life for the infant. Obese women should be counseled to breastfeed and should be provided with follow-up support.

Diabetes Mellitus

Women with diabetes CAN breastfeed. Diabetes is caused by insufficient insulin production or inefficient use of insulin. There are three classifications of diabetes: insulin-dependent, non-insulin dependent, and gestational diabetes. Gestational diabetes is a glucose intolerance, which manifests itself during pregnancy and usually disappears following delivery.

Diabetes and Breastfeeding

- About half of all infants born to diabetic mothers have low blood sugar at birth. Breastfeeding should begin as soon after birth as possible as colostrum helps to stabilize the infant's blood sugar. Mothers should be encouraged to pump if the infant is not able to breastfeed.
- During the immediate postpartum period, diabetic mothers may have erratic and drastic changes in blood sugar levels
- Milk production may be delayed several days.
- Once blood glucose level stabilizes, it is generally lower during lactation.
- Breastfeeding may decrease the need for insulin or cause a temporary cessation of symptoms.
- Diabetic mothers are more susceptible to infections such as mastitis and thrush and should be taught the early symptoms and treatment for these conditions.
- Insulin therapy is compatible with breastfeeding.
- When the diabetic mother weans the infant from the breast, there may need to be alterations in the mother's diet and insulin intake.

Thyroid Disorders

The thyroid gland controls the body's metabolism and promotes normal growth and development of the central nervous system. Postpartum thyroid dysfunction is fairly common, occurring in about 17% of all women.

Hypothyroidism (underactive thyroid): Mothers may experience fatigue, depression, and a poor appetite. Hypothyroidism can also result in a low milk supply. The condition is often attributed to hormonal and lifestyle changes after birth and may go undiagnosed.

Hyperthyroidism (overactive thyroid or Grave's Disease): Mothers with hyperthyroidism may experience weight loss, nervousness, heart palpitations, and a rapid pulse. Milk supply does not seem to be affected. If the condition is severe, immediate treatment is necessary and is usually compatible with breastfeeding.

Sheehan's Syndrome

Sheehan's Syndrome is caused by severe postpartum hemorrhage and may result in damage to the pituitary gland, causing possible breastfeeding failure. Other symptoms include weight loss, loss of pubic and underarm hair, inability to tolerate cold, low blood pressure and breakdown of vaginal tissue. It may also result in future infertility.

Postpartum Depression

Postpartum depression often occurs during the first few weeks when the maternal-infant bond is developing. Women with limited support systems and high levels of stress are more likely to suffer from postpartum depression. Most medications for postpartum depression are compatible with breastfeeding. Postpartum depression can be divided into three categories of severity.

Postpartum Blues: Most women, about 70-80%, will experience crying, irritability, fatigue, and insomnia in the early postpartum period. The exhaustion following delivery, hormonal changes, and adaptation to life with a new baby are all contributing factors. These temporary "blues" usually begin on the third day and continue for

several days and are more common in women having their first baby.

Postpartum Depression: Mothers experiencing symptoms of the blues which intensify and last longer than two weeks may be suffering from postpartum depression. Late-onset postpartum depression can occur several weeks or months after delivery.

Postpartum Psychosis: Distorted perceptions of reality, hallucinations, and suicidal or homicidal thoughts are symptoms of postpartum psychosis. Postpartum psychosis usually begins during the first two weeks of birth and intensifies, requiring immediate treatment.

Surgery or Hospitalization

Hospitalization or surgery can be a stressful experience for a mother. Helping women to maintain lactation can help reduce anxiety. Encourage mothers to:

- Express and store a supply of breast milk, if feedings will be missed
- Request the use of lactation services and a hospital grade pump, if available
- Arrange to breastfeed the baby just prior to and following surgery
- Arrange for rooming-in, if possible
- Find comfortable breastfeeding positions

In the event that hospitalization or surgery is unexpected, encourage the breastfeeding mother to let her health care provider know as soon as possible that she is breastfeeding. If necessary, hospital staff or a significant other can pump the mother's breasts to provide milk for the baby and help prevent complications such as mastitis.

Breast Surgery

Women who have had breast surgery are at an increased risk of insufficient milk. The presence of incisions or scar tissue indicates the possibility of severed milk ducts and the need for further evaluation. Breast surgery often causes a reduction in sensation in nipple and areola, decreasing the hormonal response. New research suggests that the intermingling of fat and glandular tissue and the low number of milk ducts make

breast surgery quite complex to preserve a woman's ability to fully breastfeed. Breastfeeding success is often greater following breast augmentation surgery than following breast reduction surgery. Severe breast injuries may also temporarily or permanently affect breastfeeding. The degree of breastfeeding success is variable and breastfeeding should be encouraged with careful evaluation of infant growth.

Summary of Maternal Health Concerns	
Condition	Breastfeeding OK?
Cancer	Yes, unless treatment options are contraindicated
Cystic Fibrosis	Yes
Multiple Sclerosis	Yes
Carpal Tunnel	Yes
Physical Limitations	Yes
Obesity	Yes, may have early breastfeeding failure and need targeted support
Diabetes	Yes
Thyroid Disorders	Yes, hypothyroidism may cause low milk supply
Sheehan's Syndrome	Possible. May cause breastfeeding failure.
Postpartum Depression	Yes
Breast Surgery	Yes, degree of breastfeeding success varies.
Hospitalization and Surgery	Yes

MODULE IV

On-going Support

Breastfeeding in Emergencies

“Whether an emergency makes headlines or takes its toll quietly, as in the “silent emergency” of malnutrition, the survival, growth and development of infants and young children can clearly be enhanced by breastfeeding.”

~UNICEF

Breastfeeding-Friendly Hospital Initiative News

Mothers and infants are increasingly affected by emergency situations both globally and in the United States. In emergency situations, such as natural disasters or armed conflicts, women and infants may be displaced, food sources may be scarce, and the risk of disease is increased. Breastfeeding in emergencies provides infants and young children with increased protection from malnutrition and disease, a sustainable food source and the warmth and closeness that is critical to mothers and infants during emergency situations. Artificial feeding in emergencies increases the risk of malnutrition, disease, and infant death. These risks are increased due to poor hygiene, crowding, and limited water and fuel.

Women CAN breastfeed in stressful situations

While extremely stressful situations can affect a woman’s MER or milk release, milk production is not affected by stress. Anxiety may delay the MER or cause milk to stop being released from the breast, but this response is usually temporary. A woman’s ability to manage stress internally is generally a greater contributing factor than external stressful circumstances. Increasing the infant’s suckling time at the breast, increases the production of oxytocin, the milk-releasing hormone. Breastfeeding may also help to reduce tension and calm both mother and baby.

Malnourished Women CAN breastfeed

Most malnourished and traumatized women can produce enough milk to feed their baby. The quality and quantity of milk production is usually unaffected by the nutritional state of the mother. True insufficient milk is extremely rare. When a mother is severely malnourished, the nutrients most likely to be low include calcium, magnesium, zinc, vitamin B6, and folate. However, when malnourished women

OBJECTIVES

Identify common misconceptions about breastfeeding during emergencies

Outline strategies which promote breastfeeding during emergency situations

Describe methods of induced lactation and relactation

breastfeed, it is often the mother who suffers and not the infant because nutrients from the mother’s body stores will be secreted into the breast milk. The most effective solution to assisting malnourished women and infants is to feed the mother, not the infant. Feeding the mother may help her to maintain or regain her strength to care for her children and help her to fight off infection and disease. Formula donations are inappropriate in emergency situations and may be used instead to enrich cereals or hot drinks for mothers and older children.

Breastfeeding in Emergencies

- Women CAN breastfeed in stressful situations
- Malnourished women CAN breastfeed
- Babies need ONLY breastfeeding for the first six months
- Breastfeeding CAN be re-established
- Formula supplements are NOT always needed

Babies need ONLY breast milk for the first six months

Water is often contaminated and limited in emergency situations. Breast milk is nearly 90% water and is all the baby needs for the first four to six months. Exclusively breastfed infants usually do not need additional liquids such as plain water, sugar water or tea. When safe and appropriate complementary foods are not available, exclusive breastfeeding may continue beyond six months.

Breastfeeding CAN be re-established

It is possible for women to reestablish a milk supply once they have weaned or to begin breastfeeding if it was never initiated. Women can redevelop a milk supply with enough nipple stimulation and milk removal. Nipple stimulation may be provided by the infant or older child suckling at the breast, hand expression, or pumping. Breastfeeding may take several days or weeks to reestablish and mothers need adequate support and encouragement during this time. Infants may also need supplementary feeds as the mother builds up her milk supply and the baby transitions to the breast.

“In the best of times, breastfeeding is the optimal feeding choice for young children because it provides babies with all vital nutrients for growth and development, but in times of disaster, breastfeeding can mean the difference between life and death.”

~ Ms. Durdin-James,

African-American Breastfeeding Alliance, National President

Relactation and Induced Lactation

Relactation is the process of establishing lactation in a woman who has recently given birth. This may occur days, weeks, or months after breastfeeding has ended. Women often choose to relactate following untimely weaning, a delay in breastfeeding initiation due to prematurity or illness, or when a mother begins bottle-feeding and changes her mind or discovers the infant cannot tolerate formula. The shorter the interval between the birth or last breastfeeding and the more willing the infant is to suckle at the breast, the easier relactation is to accomplish.

Induced Lactation is the process of establishing lactation in a woman who has never given birth or has not recently given birth. In emergency and disaster situations, friends or relatives may also relactate or induce lactation to provide the necessary nourishment for the infant. Women may induce lactation for adopted infants. Few adoptive moms produce 100% of the milk that baby needs. In induced lactation, the mother-infant bond from breastfeeding is the best measure of successful breastfeeding.

Guidelines for Induced and Relactation

- Breastfeed before any other nourishment is provided for a given feeding.
- Provide all sucking at the breast using a supplemental nursing system if necessary.
- Provide supplements by SNS, cup, or alternative feeding methods. Avoid the use of pacifiers and bottles to encourage suckling at the breast.
- Monitor the infant's weight gain and output and adjust the supplement as needed.
- If the baby is willing to nurse at the breast, breastfeed at least 8-10 times per 24 hours
- Give the baby plenty of skin-to-skin contact to increase comfort at the breast and help increase milk supply.
- Build the mother's confidence and ensure that she has enough food, fluids, rest, and support.
- Explore a woman's motivations and desires to relactate and help her to develop realistic goals.
- Certain prescription medications and herbal remedies may be used to help stimulate or increase milk production.

Formula supplements are NOT always needed

Donations and the use of formula supplements in emergency situations is extremely hazardous. The risks and benefits of their use should be carefully considered. Formula should only be used when breastfeeding or breast milk is not possible or during relactation or induced lactation when supplementation is still necessary. Emergency situations are usually confusing and chaotic. Women involved in emergency situations may suffer displacement, trauma, malnourishment, or anxiety and are at increased risk of breastfeeding problems. Mothers and infants in emergency situations need targeted support for breastfeeding. Ensuring optimal breastfeeding behaviors and identifying signs of concern are crucial in emergency situations. Policies and services, which undermine optimal breastfeeding, should be avoided. Successful breastfeeding during emergency situations can help save lives and enhance the future health of both the mother and baby, reduce disaster relief costs, and restore a woman's confidence in her ability to care for her family.

Formula supplements during an emergency should be

- Guaranteed and sufficient for the duration of the emergency
- Accompanied by additional health care, water and fuel
- Include plans to re-establish breastfeeding
- Not be distributed to the general public
- Not be used as a method of advertising

Nutrition

“Mothers and babies form an inseparable biological and social unit; the health and nutrition of one group cannot be divorced from the health and nutrition of the other.”

*~Global Strategy for Infant and Young Child Feeding
World Health Organization*

Nutrition and dietary intake can directly affect the health and nutritional status of breastfeeding mothers and infants. When women are given too many rules concerning diet, especially when the rules are too restrictive or hard to follow, they may not choose to breastfeed. Discussing a mother’s nutrition as it relates to breastfeeding provides the opportunity to discuss the mother’s needs and concerns. Nutritional counseling detailing the mother’s dietary concerns can enhance the breastfeeding relationship and improve the health of women. Education outlining appropriate complementary feeding with continued breastfeeding and gradual and sensitive weaning could also enhance the breastfeeding relationship and improve the health of infants.

Maternal Nutrition

Breastfeeding women should be encouraged to eat a healthy, varied, and balanced diet that is rich in whole grains, fruits, vegetables, and protein and calcium-rich foods. Breastfeeding women consume about 2700 calories per day, roughly 300-500 calories more than the nonpregnant or non-breastfeeding woman. Nutritional counseling should instead encourage breastfeeding women to “eat to hunger” using a healthy and balanced diet, rather than specific caloric intake. Women who continue to breastfeed after the return of their period may need to eat additional foods rich in iron. Routine vitamin supplements are not needed if the mother eats a healthy, varied, and balanced diet.

Women living under a variety of circumstances can breastfeed their babies. Evidence suggests that women are able to produce milk with adequate protein, fat, and carbohydrate, and most minerals even when their nutrient supply is limited. The energy, protein, and other nutrients found in breast milk come from the mother’s diet or her own body stores. When dietary intake does not meet all the nutrient needs, nutrients from the mother’s own body tissues will be secreted

into the breast milk at the expense of the mother’s reserves or stores.

Women from disadvantaged backgrounds may be at a high risk for nutritional deficiencies. However, even in cases of extreme malnourishment, milk volume is generally not affected by nutritional status. If a low-income mother is malnourished to the extent that it affects her milk supply, feeding the mother, not the baby is generally healthier and less expensive. Women with restricted eating patterns such as vegetarians, adolescents, mothers with food allergies, anemia, or weight problems may need additional targeted nutritional counseling and a referral to a dietitian. Breastfeeding women do not need to eat certain foods or avoid certain foods. Most breastfeeding women can eat anything they like in moderation, including chocolate and spicy foods, without an effect on their baby. Foods the mother eats can change the color and flavor of her breast milk and she may see changes in the stool and urine of the baby. A few women may notice a sudden change in behavior or health in their infant when they eat certain foods.

OBJECTIVES

Describe healthy nutritional habits for breastfeeding women

Identify populations at risk of poor nutritional status

Recognize signs that an infant is ready for complementary foods and discuss methods of introducing solid foods

Describe strategies to ease the weaning process

When eliminating a suspected food allergen from the mother's diet to determine its affect, observe the infant for symptoms to disappear. For symptoms to disappear entirely, it may take up to two or three weeks. Improvement is usually noted within five to seven days. If a nutrient must be eliminated, special dietary counseling should be conducted and supplements added if necessary.

Signs of Allergy or Food Sensitivity in the Infant

- Fussiness, crying, or colic
- Changes in sleep patterns
- Diaper rash or other skin rashes
- Eczema or dry skin
- Wheezing or asthma
- Vomiting, constipation or diarrhea

Weight Loss and Exercise

Women should be given realistic expectations of weight loss. Most breastfeeding women who eat to appetite lose about 1-2 pounds per month after the first month. Weight loss up to 4-5 pounds is not likely to affect milk volume. Weight loss generally continues after the first four to six months, but slows. Regular exercise is also compatible with breastfeeding. Dieting during the early weeks postpartum, the use of liquid diets or weightloss medications and rapid weight loss while breastfeeding is not recommended.

"I just couldn't stop losing weight with the breastfeeding. I ate as much as I possibly could, but I kept losing."

*~ Jodie Foster,
Oscar-Award Winning Actress and
Director*

Recommendations for Maternal Diet

- Consume nutrients from a well-balanced and healthy diet rather than from vitamin and mineral supplements
- Eat a variety of fruits and vegetables, whole-grains, calcium-rich dairy products, and protein-rich foods
- Provide individual nutritional counseling to women with very low nutrient intake of one or more nutrients
- If nutritional counseling uncovers a deficiency, encourage women to eat foods that are rich in those nutrients
- Provide women with culturally sensitive and appropriate nutritional information
- Encourage adequate intake of fluids by encouraging mothers to "drink to thirst"
- If the elimination of a major nutrient source is necessary, such as when treating an allergy, counsel the mother on how to substitute other foods to achieve adequate intake

Complementary Foods

Breast milk is all the nutrition infants need for the first six months. Research has indicated that the infant's digestive system may not be mature enough to digest solid foods prior to this age and the infant's growth and development is generally not improved by adding complementary foods before six months. The early introduction of complementary foods displaces breast milk intake and increases the infant's risk of aspiration and allergies. Most infants are developmentally ready for solid foods around six months of age.

Complementary feeding beginning in the second half of the first year, with continued breastfeeding, provides the infant with the needed nutritional requirements for adequate growth and development. Complementary foods high in iron should be introduced gradually beginning around six months of age. As complementary feeding begins, encourage the mother to practice responsive feeding by:

- Being sensitive to hunger and satiety cues
- Using eye contact and talking during feeding

- Minimizing distractions during meals if the child is easily distracted
- Feeding slowly and patiently, without forcing
- Feeding the infant directly or assisting the infant when necessary
- Offering the child a variety of tastes and textures

The child's needs will vary based on the differences of breast milk intake and the amount of complementary foods. The amount of complementary foods will begin small and gradually increase as the child grows. The consistency and variety of foods will also increase, as the child grows older. Infants can eat pureed, mashed and semi-solid foods beginning around six months. By eight months most infants can begin eating "finger foods" such as cooked carrots or sweet potatoes. By twelve months, most children can eat the same types of foods as the rest of family. Encourage mothers to avoid offering foods that may cause choking such as nuts, raw carrots, or grapes or giving foods that are high in calories and low in nutritional value such as candy, soda, and desserts.

When beginning to add complementary foods, encourage mothers to add one food for several days prior to adding any additional foods and watching for signs of possible allergy as each new food is added. Feeding the infant a variety of foods also helps to ensure adequate nutrient intake. As the child grows, the number of times they receive complementary foods will increase. Feeding the infant complementary foods more often than is necessary can lead to excessive displacement of breast milk.

The peak incidence of diarrhea disease is during the second half of the first year of life, as complementary foods increases. Mothers need to pay close attention to hygiene during food preparation. Encourage them to wash their hands, use clean utensils, and store food safely.

Signs of Readiness for Solid Foods

- Baby can sit up well *without* support
- Baby has lost the tongue-thrust reflex and does not automatically push solids out of his mouth
- Baby is ready and willing to chew
- Baby is able to receive food from a spoon
- Baby is eager to participate in mealtime and may try to grab food and put it in his mouth
- Baby shows signs of fullness such as turning head away

Most breastfed infants will eat complementary foods

- 2-3 times per day at six to eight months of age
- 3-4 times per day at nine to eleven months of age
- 3-4 times per day with additional nutritious snacks 1-2 times per day at twelve to twenty-four months of age

Guidelines for Complementary Feedings

- Practice exclusive breastfeeding for the first four to six months, with continued breastfeeding as complementary foods are added
- Practice responsive feeding
- Practice good hygiene and proper food handling
- Gradually increase the quantity of foods as the child grows older, while continuing to breastfeed
- Gradually increase the consistency and variety of foods
- Gradually increase the times per day a child receives solid foods
- Feed a variety of foods

"Optimal complementary feeding depends not only on what is fed, but also on how, when, where, and by whom the child is fed."

~ World Health Organization

Weaning

The benefits of breastfeeding continue and become increasingly significant the longer breastfeeding continues. The AAP recommends exclusive breastfeeding for the first six months with continued nursing through twelve months and beyond. The AAP also notes that there is no upper limit to the duration of breastfeeding and no evidence of psychological or developmental harm from breastfeeding into the third year of life or longer. The WHO also recommends breastfeeding for at least two years.

While there is no “right age” for weaning, having realistic expectations about weaning can help ease the process for both mothers and babies. Weaning begins when breastfeeding is replaced with other sources of nutrition, whether it is formula or solid foods, and ways of nurturing. Abrupt weaning should be avoided if possible as it can be difficult physically and emotionally for both mother and baby. Gradual weaning is more comfortable and satisfying for mothers and babies. Many women find it rewarding to breastfeed until their infant is ready to wean. Children who are breastfed until they are ready to wean are often more independent, secure, and content.

A baby’s suckling needs often decrease between nine months and three years. Few babies are developmentally ready to wean prior to one year. Research has shown that in societies where children are allowed to breastfeed as long as they want, the infants usually self-wean between three to four years of age. If the infant is younger than one year, a formula supplement will be necessary. This may be provided by either cup or bottle, depending on the readiness of the infant. For older babies, other foods, drinks, or even cuddle sessions may substitute for the nursing session. As weaning takes place, the mother’s milk supply will adjust accordingly.

To Ease the Weaning Process

- Start by skipping the least favorite feeding. Replace the feeding with solids, a bottle or cup, special activity, or cuddling. Nap and bedtime breastfeeds are usually the last to go.
- Gradually drop other feedings until the last feeding has been omitted. Be sure to leave several days until the baby and mother have adjusted to the skipped feedings prior to ending another breastfeed.
- Don’t offer, don’t refuse. Do not remind the infant of breastfeeding, but if the infant persists or behavior changes, feel free to breastfeed.
- Avoid weaning during an illness, developmental milestone, or significant life changes. Breastfeeding offers nutritional, immunological, and emotional benefits and breastfeeding may increase during these times.
- Provide increased emotional nourishment. Cuddle the infant often, make eye contact and talk with the baby, read together and keep the infant close.

Michael Jordan’s mom breastfed him for 3 years and said “I feel that is why he is the athlete he is.”

~ Delores Jordan

Returning to Work

"I just pulled up my shirt, stood off to the side and did it. Everyone was pretty mature about it."

~Joy Fawcett

*Retired star defender for the U.S. Women's National Soccer Team,
who several years ago managed to play soccer and breastfeed her infant during halftimes*

For generations, women have continued to breastfeed and return to work. Nearly 75% of women with children under the age of three are employed. Breastfeeding provides many rewards to the working mother and her infant, but comes with its own set of unique challenges. For many women, returning to work or school is viewed as a barrier to breastfeeding. Providing women with support and encouragement in their decision to return to work and continue breastfeeding is often key to their success.

Benefits of breastfeeding in the workplace

- Health benefits for both mother and baby
- Helps mothers to feel emotionally connected to their baby while they are separated

Companies with breastfeeding support programs have noted

- A cost savings of nearly \$3 for every \$1 invested in breastfeeding support
- Reduced absenteeism to care for sick children
- Lower health care costs
- Improved employee productivity
- Higher morale and greater loyalty
- Improved ability to attract employees and reduced staff turnover

Scheduling Options

When exploring various return to work options, it is often helpful for women and their employers to remember that breastfeeding and pumping while at work is a temporary situation and will gradually decrease as the child grows. Encourage women to consider different scheduling options and to discuss her desires with her employer as early as possible.

OBJECTIVES

List the benefits of breastfeeding when women return to work

Describe ways companies can support breastfeeding women in the workplace

List factors that are important to successful breastfeeding when returning to work

List ways that DHEC can support breastfeeding mothers

Flexible Scheduling Options

- Part-time work
- Job-sharing in which two employees share the responsibilities and benefits of one job
- Return to work slowly over several weeks or months, often beginning at part time and working up to full time
- Flexible time, working unusual hours to accommodate at home time
- More hours on a fewer number of days
- Work all or part of the job from home
- Bring the baby to work

Milk Expression

Many women find it helpful to begin pumping about two weeks before returning to work in order to become comfortable with the breast pump and begin storing milk. Women may pump their breasts at any time: before, during, or after a breastfeeding. The baby will still be able to breastfeed even if the mother just expressed several ounces prior to putting the baby to the breast. Many women are concerned about their milk supply as they begin breast milk expression and storage.

Reassure women that...

- They will have enough milk when they are separated from their baby.
- The baby is getting enough to eat when nursing at the breast; babies are more efficient at milk removal than a pump.
- The mother's body does not respond to the pump in the same way as to the baby.
- The MER will eventually respond to the pump in a similar way it responds to the baby.

To maintain a healthy milk supply, a mother must be able to regularly express her milk while she is away from her baby. Mothers need to discuss their plans to return to work and continue breastfeeding with their employers as soon as possible. The following should be addressed:

How often: Women will need to pump about as often as the baby is breastfeeding, or every 2-3 hours. For an 8-hour day, this usually means pumping mid-morning, around lunch, and mid-afternoon. Pumping both breasts simultaneously takes roughly 15-20 minutes or 30 minutes, if each breast is pumped separately.

Where: A secure, clean and relaxing environment (that is NOT a bathroom) should be available for pumping. Ideally, the room should have an electrical outlet to plug in an electric breast pump, a sink to rinse off the pump, and a comfortable chair. If possible, it is helpful to have a hospital grade pump and small refrigerator available.

Milk Storage: Labeled breast milk can be stored in a small refrigerator or it can be kept in a cooler with ice packs.

If a mother notices or is concerned about a decrease in her milk supply

- Breastfeed more often when she is with the baby
- Express more often and for a longer duration while at work or school
- Use a double electric pump
- Massage the breasts before and during pumping
- Breastfeed at night when prolactin levels are highest
- Increase rest and relaxation
- Focus on the relationship with the baby rather than the number of ounces of milk

Sample Pumping Schedule

Time	Location	Breastfeed or Pump
7:00 am	Home or child care	Breastfeed
10:00 am Break	Work	Pump
12:30 pm Lunch	Work	Pump
3:30 pm Break	Work	Pump
6:00 pm	Home or child care	Breastfeed

Some babies will switch their schedule to breastfeeding more often during the nighttime when mother and baby are together and less often during the day when mother and baby are separated. Women who are not able to express while at work or school may provide formula to the baby when they are separated from their baby and breastfeed when they are together. To help maintain a milk supply when breastfeeding and using supplementation, it is helpful to breastfeed frequently when the mother and baby are together, avoid long separations except when at work or school, breastfeed the baby at night, and give the baby lots of skin-to-skin contact.

Child Care

Women who return to work are almost always faced with the challenge of finding someone else to care for their infants. Continued breastfeeding and the feeding of breast milk provide the infant with continued protection from infections and illness. Finding a childcare provider that is supportive of breastfeeding can be key to continued breastfeeding success for working mothers. Women may need to discuss the following with their childcare provider:

Returning to work and leaving the baby for someone else to care for can be more difficult than many women anticipate. Separations may be more difficult when the baby is tired, hungry, or sick. Whenever possible, try to time separations when the baby is happy, awake, and well. Both mother and baby may find it helpful to create a good-bye ritual or play separation and return games such as peeka-boo. It can also be helpful if the infant is familiar with the caregiver. Many mothers are also concerned about introducing the bottle prior to their return to work. Most babies will eventually accept a bottle and can switch between breast and bottle with ease. A few babies may initially refuse the bottle or have difficulty returning to the breast. A few weeks before returning to work, begin offering the bottle so the baby will become familiar with it. Some babies refuse to take a bottle from the mother, but will take it from another caregiver.

Discuss with Child Care Providers

- Proper handling, storage, and feeding of breast milk
- Alternate feeding methods, if avoiding bottles
- Paced bottle feedings, if bottles are used.
- Desire to breastfeed their baby at departure and upon arrival on site
- Need to avoid feeding the baby close to the expected arrival time, so the baby will be eager to breastfeed

Tips for Returning to Work

- Take maternity leave for as long as possible
- Focus on recovering from birth, getting breastfeeding off to a good start, establishing a healthy milk supply, and bonding with the baby
- Begin to introduce the bottle or cup a few weeks prior to returning to work
- If the baby will not take the bottle from the mother, encourage someone else to feed the baby
- Choose a childcare provider that supports breastfeeding
- Begin storing milk about two weeks prior to returning to work
- Confirm the proposed plan to pump while at work with the employer
- Return to work on a Wednesday or Thursday
- Discuss flexible scheduling options and return to work slowly if possible

Ways DHEC can support breastfeeding employees

- Provide breastfeeding education on topics such as the benefits of breastfeeding, returning to work, and the prevention of common difficulties.
- Provide access to a secure, comfortable, and well-equipped breastfeeding room
- Provide breaks for breastfeeding or pumping
- Offer lactation support services when necessary

Documentation

“Knowing is not enough; we must apply. Willing is not enough; we must do.”

*~Johann Wolfgang von Goethe
German Author (1749-1832)*

Documentation and record keeping are valuable skills for those working with breastfeeding mothers and infants. The information contained in the health record allows for continuity of care to individual mothers and infants. The record serves as a basis for documentation of the care and services provided to the mother and her infant, are a source of communication between providers, and protects the legal rights of the mother, infant, and providers. All records of breastfeeding assessment and followup are legal documents and in the case of malpractice suits provide evidence of the interactions with the mother and baby.

Documentation and Forms

South Carolina DHEC currently uses one main form for documentation of breastfeeding interactions and assessment; the Breastfeeding Summary Form #0757. Client confidentiality and privacy must be respected at all times; when collecting, maintaining, and using the information gathered. When documenting information in the health record, basic rules of record keeping should be followed:

- Record all interactions, however brief, with mother and infant
- Use a permanent ink pen (not a pencil)
- Correct any errors made in the process of writing by drawing a single line through errors. The line should be dated and initialed. Errors discovered after the time of the interaction should be corrected in follow-up notes.
- Use clear, concise and succinct notes when detailing the interaction
- Avoid the excessive use of abbreviations and acronyms
- Record notes during the counseling session or phone conversation and write summaries in the record as soon as possible after the interaction

OBJECTIVES

List key components of record keeping

Use the Breastfeeding Summary Form to document contacts with pregnant and breastfeeding women and infants

Use the Breastfeeding Assessment Tool to document a breastfeeding assessment or in-person consult

- Date and sign all records
- File the original record as designated by the region and keep original records for the designated period of time.

Breastfeeding Summary

Form (DHEC #0757)

The Breastfeeding Summary Form of DHEC #0757 should be completed by all staff for all breastfeeding contacts, including pregnant women desiring to breastfeed and breastfeeding women and infants. The purpose of this form is to provide a uniform system for collecting information on breastfeeding activities. As much information should be gathered at each interaction as possible.

Breastfeeding Assessment Tool

The Breastfeeding Assessment Tool is a new form that is being developed, but not ready for use. The purpose of this form will be to aid providers in identifying signs that breastfeeding is going well or signs of concerns which should be addressed. This form is designed to be used in coordination with the Breastfeeding Summary Form. Any history information that is not included on the Breastfeeding Summary Form should be gathered at this contact.

Gathering information about a woman's and an infant's health history is crucial to effective breastfeeding care and assessment. The purpose of gathering this information is to uncover facts that may affect the current breastfeeding situation.

All records for breastfeeding mothers and babies should include

- Mother's name, address, phone number
- Infant's name and date of birth
- Infant's birth weight
- Mother's obstetric care provider
- Infant's pediatric care provider
- Reason for consultation and type of interaction (phone, class, home visit, etc.)
- Any significant findings or concerns
- Key elements of the plan of care

Helpful questions for breastfeeding counseling

- How are you feeling now?
- How was your pregnancy?
- Did you have difficulty conceiving?
- Any hormonal problems (thyroid, diabetes, etc.)? Are you currently taking any medications? Smoking?
- Drinking alcohol?
- Would you tell me about your birthing experience with this baby (include any pain medications, reasons for induction or c-section, etc.)?
- What happened immediately after you delivered?
- What were the first feedings like?
- How are feedings going now?
- How do you know when it is time to feed the baby?
- How do feedings end?
- If having difficulties, when did the difficulties begin?
- What do you think caused the difficulties?
- When do the difficulties occur? Always? Certain times of the day, during certain infant states, certain locations?
- What have you tried to improve the situation (pacifiers, formula, pumping, etc.)?
- Tell me about the past twenty-four hours in caring for and breastfeeding the baby.
- What are your goals for breastfeeding?

"We must be the changes we wish to see in the world."

*~ Ghandi
Political and Spiritual Leader of India*



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